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AN APPROACH TO MANAGEMENT

PUBLISHER'S NOTE

Those who have studied the numerous articles that have recently appeared in the public press dealing with the urgent tasks confronting modern industry to-day, and indeed every form of enterprise whether publicly or privately owned, know that the most urgent need of all is for education and training in the common tasks of management.

Sir Hector J. W. Hetherington, LL.D., Principal and Vice-Chancellor of Glasgow University, writing in *The Times* under date 7th November, 1945, in support of the scheme devised and launched to establish with Government aid an Administrative Staff College, sums up the problem as follows:—

“ Every administrative enterprise calls for the capacity to hold in mind a total and perhaps distant situation, to plan ahead imaginatively and firmly and yet with the necessary margins, to assemble in the right relation and at the right time diverse material and human resources, to take consistent opinions on points of detail and, indispensably, to see that junior executives in their several spheres know how to do the same. In these things there is an order and technique which are not simply gifts of nature. Training helps. Moreover, it is plain that in the complex world of to-day there is a greater need than ever for this constructive skill. Industry, distribution, housing, communications, the affairs of

PUBLISHER'S NOTE—continued.

central and local government, and, in their degree, the concerns of trade unions and of educational, research and social service organisations, present problems similar in kind and of steadily enlarging range. More and better administrators will certainly be wanted.”

Mr. Arthur Bryant in the *Sunday Times* dated 26th May, 1946, has this to say under the heading “Leadership for Full Production” :—

“ The key to efficient production in a free community is to make a man want to work, to teach him how to work and to direct his work rightly. . . . Every industrial worker ought to be given a clear and intelligible reason for whatever he has to do and for the way he has to do it. And as it is not easy to impart technical knowledge, training in industrial teaching is desirable for all who hold positions of responsibility. . . . The Ministry of Labour's schemes have already done much to show what can be accomplished in this direction.”

The Author in his Preface says that he has endeavoured to compress managerial experience into an essence of governing or guiding principles to be expanded and tried out by each reader in the light and terms of his particular field of work or interest. We as publishers believe that he has fully achieved his purpose.

Continued on back flap.

AN APPROACH TO MANAGEMENT

BY
G. E. MILWARD

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FOREWORD

BY SIR HAROLD HARTLEY, K.C.V.O., M.C., F.R.S.,
Hon. Fellow Balliol College, Oxford.

I AM writing this Foreword in acknowledgment of the debt that his many friends owe to the author for his years of unselfish service to them at the Management Library. We all knew that we could count on his help and advice at any hour, and that no problem was too troublesome for him to deal with. His book begins appropriately with chapters on the human factor in management, as it was in the solution of human problems that we found his help so valuable. He had the gift of seeing where a man or woman could do their best work, and his acquaintance with industry is so wide that he almost always found them the opportunity they sought.

With the growing tendency in the inter-war years to form larger industrial units, "good management practice has become more and more essential to industrial and commercial efficiency," to quote the recent Report of Sir Clive Baillieu's Committee on a Central Institute of Management. If it is to be efficient a large industrial concern must have the sensitive reactions of a living organism with the delicate interplay and co-operation of its various parts, and those rapid impulses that traverse its nerve fibres to give an immediate warning when action is required, or when all is not well.

The need for increased peacetime production was never so great as it is today, and the attainment of that goal depends in large measure on management. Sound managerial practice alone can establish the good relations at each level on which not only the happiness and mutual confidence of each individual depend, but also the effectiveness of the organisation as a whole. Management has reached the stage when certain accepted principles are beginning to emerge, but it is still an art rather than a science, and indeed it will always depend on the art of human sympathy and understanding.

Most of us have been too busy in recent years to keep abreast of the growing literature of the subject, and this book will serve a useful purpose in giving us in such brief compass the benefit of the author's wide experience and reading. It is close packed with comments and suggestions that will provoke discussion and criticism, and that is its merit.

H. H.

*Hughenden,
High Wycombe,
Bucks.*

April 30, 1946.

AUTHOR'S PREFACE

THE situation as regards the supply of, and demand for, books on management and administration seems to be changing. Whereas for some years past anyone would have hesitated to add to the existing number of titles, on the ground that there was a considerable supply and no very great appreciation of this kind of reading, yet lately the subjects have become prominent both politically and economically, and also from the academical point of view. Two official or semi-official reports have appeared; the Eustace Percy Committee's Report on "Higher Technological Education," and the Cambridge Report on "University Education and Business." Both these Reports agreed that the present literature dealing with the subject of management in this country is of poor quality, and lacks the intellectual content of a sound mental discipline. The author of this book has spent some ten years collecting, evaluating and reporting upon such technical books, and is obliged to concur in the opinion expressed in these reports, yet he feels that merely to express such an opinion does not necessarily take us much further. He believes that it would be helpful to the building up of the documentation of this body of knowledge if educationalists actually engaged in its dissemination were to publish their working notes, notwithstanding the practical man's suspicion of the theorist. He therefore ventures to start the academic ball rolling with some of his own notes, which, collected as a business man, have been used and developed during some three years of teaching the principles of organisation, a subject which cannot be separated from management.

Some chapters of both these Parts have been used in teaching, and have been tried in the fire of the Seminar, or Discussion Group, where men of widely differing experiences, drawn from various countries, have argued over the thought conveyed, and in the end reached substantial agreement as to the necessity for combining a scientific, analytical approach to management problems with a respect for human desires, motives and idiosyncracies.

The Approach to Management developed in this book is a natural and human application of Scientific Method within the

fields of the government of any undertaking, and its supervision. No claim is advanced that Management is a Science. Those who actually manage clearly know that it is not. The study of Scientific Method can give a valuable background to all who aspire to the higher ranks of management, no matter what the particular activities of the enterprise may be; and it is the foundation on which a number of new professions have been built.

The subject matter of this approach is heavily condensed. It is based upon principles. Personal experience, and the application of the principles to any particular departmental field, or to any special trade or industry, has been avoided. It may be, as the Author has been told by those who have read the manuscript, that it takes "a lot of reading." Perhaps it does, for it was designed to compress experience into an *essence* of governing or guiding principles to be expanded and tried out by each reader in the light and the terms of his particular field of work or interest.

The Economic period upon which we are now entering may well be one of "Organised Co-operation," where "Regulation" takes the place of "Competition," and Organisation, as a subject, assumes the broader meanings developed in this book—broader than the old conception of authority maintained by strict discipline. The time would therefore seem to be appropriate to link any new approach to management with the knowledge now becoming available of the individual and social requirements of our Machine Age, and to acknowledge the help in this particular field which is available in the books of such writers as Professor Elton Mayo and his team of research workers of the Faculty of Industrial Research at Harvard University.

The book is written for two classes of readers: those experienced in management who are still young enough to think in terms of the future, and also for younger men who will some day, themselves, become managers.

The Author's thanks are accorded to those who have attended his Training Courses and contributed to the content of Part II.

G. E. M.

Kenley.

May, 1946.

CONTENTS

CHAP.		PAGE
	FOREWORD BY SIR HAROLD HARTLEY	v
	AUTHOR'S PREFACE	vii

PART I

THE HUMAN FACTOR AND THE MANAGEMENT OF PEOPLE

I.	THE HUMAN FACTOR—NON-FINANCIAL INCENTIVES— THE GROUP FACTOR OR WORKING RELATIONSHIPS .	3
II.	SUPERVISION, CO-OPERATION AND COLLABORATION .	10
III.	COMMITTEES IN ORGANISATION—ACTION COMMITTEES— INTERVIEWING—THE EMPLOYMENT INTERVIEW— SCIENTIFIC INVESTIGATION—INQUIRY INTO PERSONAL BEHAVIOUR—SALESMANSHIP—SAFETY-VALVE INTER- VIEWING	16

PART II

THE MANAGEMENT OF WORK

I.	GENERAL INTRODUCTION—ORGANISATION—ORGANISA- TION STRUCTURE—OFFICE METHOD—ADVICE— DEFINITIONS—THE LINE OF AUTHORITY—EXECU- TIVE AND OPERATIONAL ORGANISATION—PRINCIPLES OF MANAGEMENT	29
II.	THE PREPARATION OF WORK—FORECASTING—OPERA- TIONAL PLANNING—POLICY PLANNING—THE DIVIS- ION OF WORK—STRUCTURE OR DIVISION OF WORK— HOW IS WORK DIVIDED?—WHAT ARE THE FACTORS GOVERNING SELECTION OF THE APPROPRIATE ORGANISATION?—CENTRALISATION AND DECEN- TRALISATION	42
III.	THE PROCESS OF COMMAND—THE CO-ORDINATION OF ACTIVITIES—THE CONTROL OF RESULTS—BUDGETARY CONTROL—PRODUCTION CONTROL	60
IV.	THE NEED FOR TRAINING—MANAGEMENT INVESTIGA- TIONS—SCIENCE AND MANAGEMENT	70
	BIBLIOGRAPHY	80
	INDEX	81

PART I
THE HUMAN FACTOR AND THE MANAGEMENT
OF PEOPLE

CHAPTER I

THE HUMAN FACTOR AND THE MANAGEMENT OF PEOPLE

NON-FINANCIAL INCENTIVES — THE GROUP FACTOR OR WORKING RELATIONSHIPS

The Human Factor. It is increasingly borne in upon all engaged in Administration or Management that it is no longer possible to make plans and issue instructions based solely upon work requirements. Those plans and instructions have to be developed or modified to make the best possible use of the staff available. The head of any organisation has not only to consider the objectives he has set himself, but he has also to keep individuals and groups of individuals working effectively together. These dual functions persist at all levels of the organisation. In considering the possible help or hindrance which the human factor may provide, it is most necessary to preserve a sense of proportion and correct perspective. The man in the street may take on trust the opinion of his lawyer, dentist or doctor, because he pays him to give specialist advice on a subject upon which he recognises his own complete ignorance, or incomplete knowledge, but on matters of social reform, or human behaviour, he feels that he himself knows something, and for that reason he will seldom accept without question professional or specialist opinion. Because of a natural interest in human behaviour, there is very real danger that the layman, when first faced by work problems involving individual or group psychology, may develop an interest and attribute an importance to them out of all proportion to their actual weight. The importance of the Human Factor is then in constant danger of well-meaning exaggeration. Unnecessary services for employees may be provided—unnecessary in a good organisation. The whole important subject of Staff or Labour Management, having for a long time been neglected, tends now to become discredited by paternalism, so that men who pride themselves on being practical smile over “welfare foibles”, and damn intelligent staff work with faint praise.

To keep the subject in its rightful place as an important

part, but only a part of a greater whole, of which it is a contributory factor, it may be possible to formulate an equation and to introduce some other factors. It is clear that in considering the Human Factor over-analysis and over-simplification tend to associate the idea of precision with a complex aggregate of individual and group relationships which themselves cannot be precisely measured or considered. None the less the broad picture shows that :

$$\text{Man} \times \text{tools} \times \text{human factor} = > \text{ or } < \text{ output.}$$

In the above equation, " man " includes woman; " tools " embrace also premises, services and equipment; the " human factor " involves not only individual, but also group behaviour; while " output " has to be considered under two main heads—those of quantity and quality. The quantity factor of output is largely conditioned and controlled by management, while that of quality involves craftsmanship and, in addition, physical provision for accuracy which, under quantity production, is a subject of management. Output is then largely a matter of management, but it is also influenced by :

- (a) Individual behaviour, in turn often heavily conditioned by extra-employment conditions.
- (b) Group behaviour, at place of work.
- (c) Craftsmanship.

An eminent industrial psychologist once expressed the opinion that it does not matter how a business is organised, provided that it caters for two needs :

- (1) For technical and friendly help freely available to every employee to enable him to overcome work difficulties.
- (2) For personal, and again friendly, help on financial, promotional or social problems.

Clearly, to satisfy these two human requirements should go some way towards securing real co-operation between management and managed, but that alone will not determine whether a person is going to give his services wholeheartedly, or what he really feels about his job and its importance, or how he regards his fellow-workers and his supervisors, or what meaning he attaches to his work. These are all important contributory factors encouraging an employee to give of his best. Not all

of them are controllable, yet most can be favourably influenced by intelligent public relations, or good personnel work.

Non-Financial Incentives. Analysis of the factors centred in work, and contributing to the desire to work, suggests the existence of at least eleven qualities. These are broadly sketched in view of the difficulty of determining them to the satisfaction of all.

(i) *Pride* in rendering a useful service, useful to the community.

(ii) *Satisfaction* resulting from doing a job well.

(iii) *Contentment*, working to a competent and trusted chief.

(iv) *Security* of employment.

(v) *Confidence* and a sense of *Competence* consequent upon correct posting to work for which qualified.

(vi) *Co-operation* arising from mutual respect between seniors and juniors.

(vii) *Stimulation* conditioned by opportunities for promotion, and *Progress* as promotion is achieved.

(viii) *Appreciation* of fair treatment and favourable working conditions.

(ix) *Fulfilment* arising from the performance of creative or constructive work.

(x) *Responsibility* developing from opportunity to take the initiative.

(xi) A sense of *Participation* arising from being consulted in matters of management.

Not all men and women are actuated by the same motives, impulses or incentives, and perhaps few will be susceptible to all eleven influences in whatever order they may be tabulated. Some work may well be of such a character that it is difficult to become enthusiastic about its performance, and much work gives no sensation of any constructive or creative fulfilment, yet there must be very few forms of work in which some of these factors could not be introduced, if careful thought were given to organisation. The list might be enlarged to reflect direct management attributes: the manner and the actual words in which a superior greets the employees; the recognition of a man's experience and standing by asking him to help a newcomer, or to keep an eye on a difficult job,

or to take on a job requiring special skill. Such marks of consideration cost very little, yet they may have considerable value.

The Group Factor or Working Relationships. In the early days of the Industrial Revolution it was common practice to pay workpeople by the team or group, leaving it to the leader of the team to assess the pay-rating of each member of the group in proportion to his skill or output; and, in the production of certain commodities, such as coal, chains, nails, etc., it is believed that a modified form of this system still persists. In a sense it recognised a family, group, or other work relationship as a unit, to which some administrative, managerial or supervisory responsibilities were delegated. As an example of team work it may be interesting to quote Schloss, writing in 1891.

“In operations such as the making of wine-glasses, in which combined labour is required, the plan adopted is as follows: The men work in a group called a ‘chair’, composed of (1) a ‘gaffer’ or ‘workman’, (2) a ‘servitor’, (3) a ‘footmaker’, and (4) a boy or ‘taker-in’. The members of the chair are rated in proportion to the degree of skill demanded by the work allotted to each. Thus, in a chair, the gaffer was rated at 6*d.* per hour (nominal), with the (nominal) condition that the chair should produce six wine-glasses per hour, say, in fact, at the rate of 1*d.* per wine-glass; the servitor was in the same manner rated at 5*d.*, the footmaker at 3*d.*, and the boy at 1½*d.* In each ‘term’ (shift) of six hours this chair was actually making eighty wine-glasses; the collective remuneration of the group thus amounting to 17/2½ (instead of the nominal 7/9*d.*).”

Schloss also adds :

“A detailed scrutiny of the various forms of collective remuneration discloses the presence in different kinds of group-work of a characteristic element of weighty importance. This is the mutual supervision exercised by the members of a group, each acting, in effect, as a superintendent in relation to the work of his neighbour, because all have a direct interest in the performance by every man of a full share in the common task.”

Wherever a number of people are closely associated together in work, particularly where each is dependent on the skill or the energy of the others, such as occurs when working on a conveyor belt, the group so created automatically forms and enforces its own code of behaviour to ensure that each of the members may have the opportunity of earning, and does earn, his wage by completing his task, and, secondly, to protect the group from victimisation in any form. Quantity production is based upon simplification of each operation and the separation of all separable processes. One result of this splitting of processes is that a number of operators could be grouped together whose work is correlated, and in combination produces a component part, or a whole. In its new form such simplified work often falls into clearly recognised and related groups which lend themselves to the development and use of group working, if that should be desired.

In the experiment carried out at the Western Electric Co.'s Hawthorne Works in the United States, an employee's self-imposed code of behaviour was determined and found to be based on the following rules : (1) You should not turn out too much work, or you are a "rate-buster". (2) You should not turn out too little work; if you do you are a "chiseler". (3) You should not say anything to a supervisor which would react to the detriment of one of your associates; if you do you are a "squealer". (4) You should not be too officious. There is a familiarity about this code and the attitude it suggests, *vis-à-vis* the management, which indicates that its use is not confined to any one factory in any one country.

The logical development following the acceptance and recognition of work relationships is presumably so to organise the work that some share of non-technical supervision is delegated to the workpeople themselves, in a group. Such delegation may be possible in varying degree according to the nature of the business, how work is divided or grouped for technical requirements and how delegation will accord with the qualities, customs and views of the operatives. Delegation of some part is almost always possible and plays a most important rôle in building the co-operative spirit.

One of the consequences of the recognition of group organisation is the need to recognise that some individuals may de-

velop a disturbing influence in some groups, yet be welcomed in others. Recognition of group responsibility then carries with it the management responsibility for careful allocation of new staff to existing groups, and the acceptance of a need for horizontal transfers of employees who become troublesome in what was previously a contented group. In the same way individuals may develop away from their existing grouping and may require transfer at the same level.

In the American experiments already mentioned, which were in fact studies of output in relation to changes in working conditions and of social factors, it was found that the delegation of some supervision to the team of workers occasioned a change which they regarded as of more importance than the carefully designed physical innovations and improvements of posture, hours of work, illumination, etc. The customary angle of supervision had been reversed, and was greeted by an improved rate of work, presumably in appreciation of the new responsibility delegated.

The immediate lessons of the Hawthorne experiment in this field appear to be that we have to recognise and respect, as far as may be possible, those work relationships which develop within groups in most organisations, large or small. The inference is that, with guidance, these groupings and the relationships on which they are based can and will take over some of the functions of supervision, and set behaviour standards at least as high as those most employers would demand. That, on the other hand, they can develop amongst employees attitudes towards work, or one another, which are, for lack of correct information, based upon misunderstanding or misinterpretation of facts; from this may arise an awkward situation where a group faithfully believes something to be true, which is in fact untrue. It is perhaps necessary to sound a word of warning concerning the assumptions that may be made from facts ascertained in this or other experiments. One of the investigators put this well: the attempt to relate changes in physical circumstances to variations in output resulted in no correlation of enough significance to be recognised by any competent statistician as having any meaning. Nevertheless it is clear that it pays in the long run to improve working conditions, air space, posture, heating, illumination,

although the human being is highly adjustable and very rapidly learns to adjust himself to any novel conditions, say, of a coal-mine, dug-out, crow's nest, desert, basement or war-time office. He or she seems to be able to change gear to suit these novel or bad conditions, and soon functions again at high speed, despite them. Although output may be maintained, physical or mental faculties may become overstrained. If the employer is interested in raising the standard of working conditions, in order to increase output within the limits of ability, and if that interest is evident to his work-people, the response is almost immediate. People like to feel that they matter, that they are of importance, and their satisfaction is reflected in their work.

CHAPTER II

SUPERVISION, CO-OPERATION AND COLLABORATION

Supervision. Mention has already been made of technical supervision, qualified by the suggestion that this is not the only form which supervision can take. Three distinct kinds of supervision seem to be developing: technical, responsible for “how” the work is to be done; management supervision for planning production and the control of output; thirdly, group supervision, a permanent and resident necessity responsible for all human problems arising from the other two. It would seem that these three forms of supervision together form a subject of such importance as to justify further analysis. The extent of superintendence will vary in particular cases, according to the nature of the work, but broadly the supervisory pattern may involve:

(1) The interpretation of policy and objectives to staff, enabling them to understand what they are doing and why it is necessary. (Group.)

(2) The planning of work and the relation of output to a time factor in a programme. (Management.)

(3) The arrangement of the sequence of operations to permit an even and sustained flow of work. (Management.)

(4) The issue of instructions. (Management.)

(5) Housekeeping or the provision of accommodation, furniture, equipment, etc. (Management.)

(6) The assignment of work to staff. (Group.)

(7) The determination or approval of work methods. (Technical supervision.)

(8) The co-ordination and balancing of all activities. (Management.)

(9) The control of output, both for quality and quantity. (Management.)

(10) The control of work relations. (Group.)

(11) The reporting to higher authority upon abilities, promotions, attendances and other matters. (Group.)

That is the broad pattern of duties which will vary in detail to suit particular responsibilities. They are numerous and varied and require the possession of aptitudes or qualities for successful supervision which are secondary to the primary ability to take a decision promptly, an ability which is as highly appreciated by subordinates as by superiors.

- (a) An active interest in, and liking for, people.
- (b) A sense of fair play and justice.
- (c) Recognition that the supervisor himself may be at fault.
- (d) Readiness to give credit or blame where either is deserved.
- (e) Intelligence and understanding in dealing with human problems.
- (f) Ability to interpret situations and problems to the staff, so that they may take some share in management.

There may well be other qualities contributing to supervisory leadership, but these six seem to have a particular bearing upon the pattern already sketched, upon which some further comment may be helpful. Those duties marked management (supervision) will be considered in a later chapter, but (4), the issue of instructions, has been heavily systematised during the War in American training for supervision (T.W.I.) The sixth duty, the assignment of work, is clearly tied up with the human factor. It suggests three principles :

- (i) When allocating work requiring varying degrees of skill or knowledge, any individual should if possible be given a task which is slightly within the top level of his skill or capability. That level of skill may be capable of being raised by training.
- (ii) The quantity of work which is asked of him should be fairly adjusted to his capacity, remembering that too little work has a bad effect on a good man.
- (iii) The exact scope of his duties should not be too closely defined, or rigidity sets in.

The *first* of these three principles leads to satisfaction all round, supervisor with supervised, and supervised with supervisor, but it presumes that the abilities and skill of the staff are

studied and known. Such knowledge is perhaps essential to all leadership.

The *second*, concerned with quantity, is perhaps as obvious a necessity as it is difficult to achieve, except where work is repetitive. It is none the less important.

The *third* principle is to avoid over-organisation, inflexibility and blind spots : the last leads to everyone disclaiming responsibility for a situation or a case which has no exact precedent, was not anticipated, and therefore was not specified when duties were originally fixed.

In the actual contact between supervisor and supervised—the interview—some progress has resulted from experiments conducted within industry, particularly well documented in Dr. Elton Mayo's researches at the Western Electric. First in order must be the attempt to get the employee to talk to you, and for the supervisor to listen sympathetically but intelligently to what he has to say, and to note what he avoids saying, or cannot say. Interviewers at first find it difficult to give their complete attention to the interviewed without interrupting him ; to refrain from giving advice ; from moralising ; arguing ; showing cleverness ; dominating the interview ; asking leading questions. It is difficult to encourage or suffer the person interviewed when he dwells on subjects of interest to himself but of no apparent importance to the interviewer ; but it is not always realised in any work situation under discussion that the significant factors, to the employee, may be external to the work itself. It is unusual to find a technical supervisor who can combine with his technical skill the art of listening to the commonplace and the irrelevant to resolve a personal difficulty, and the generalisation would appear sound that skill in handling human problems seldom coincides with other technical skills.

At the supervisor's level, both functions of management and group supervision come together, and quite often the needs of management for efficiency may run counter to their acceptability by a group of employees. The supervisor cannot delegate responsibility any further, except to the group itself. He has to accept instructions, yet permit other practice, and he realises that efficiency which has neglected the human factor may well be unattainable. These two qualities demanded

of the supervisor can therefore become mutually exclusive, a fact which suggests that "efficiency" and "management of people" may need to be staffed separately at the supervisor's level. There is, however, a danger in this suggestion, of future conflict between the two separated points of view, or of decisions being arbitrarily taken after regard has been paid to only one of these two complementary subjects. It is not clear therefore that the separation of function at this level will necessarily do more than divide authority, where integration of both viewpoints by education and experience is preferable.

Co-operation and Collaboration. Many appeals are made in time of war for the co-operation of staff, or other groups, in a joint effort for a stated purpose: increased production, defence, attack, or the common good. Such appeals for co-operation, or collaboration, seem to be of recent use, perhaps in association with the development of propaganda on the grand scale, which in its turn has taken advantage of the new technical means of "plugging" a set of ideas into otherwise unresponsive minds. They are not always successful, for various reasons which will emerge, but their use is growing, and suggests therefore that the subject of collaboration is one which may take a permanent place in the administration of any undertaking, and may develop the means permitting employees to participate in their own management. It is assumed that whatever political party or class has the direction of enterprise, management must continue, must be impartial and professional, and be efficient, in the broadest and fairest meaning which can be attached to the word "efficiency".

Historically, the first management incentives were based upon fear of physical violence to be meted out if a tribal or feudal duty was not immediately and adequately performed, and it may be noted that there was seldom any remuneration attached to the performance of the duties carrying this penalty. As enlightenment or education spread, provision was made for payment for services rendered, but at the same time strict discipline was enforced with punishments for failure to comply with orders. Later, as education diffused and took effect, it was found that penalties and punishments tended to engender an ugly spirit, and, as an alternative, various forms

of bonuses were developed for good work. Since that time facilities have further developed, and now an employee may have had as good a theoretical education as his director, and in consequence the appeal to his reason must have its place as an incentive, if his consent is to be attained, in addition that is to his adequate remuneration.

It is clear that maximum output should no longer be treated as if it were a matter of wage payment alone, for there is ample evidence that output depends on a number of factors, physical and mental, of working conditions, and what has come to be called "morale". The financial incentive presumably has the greatest appeal when people are in need of money or think they are in need of more. When, on the other hand, staff are reasonably satisfied with a fair wage in terms of the cost of living, recourse must be had to other, non-financial incentives. There will be exceptions to this generalisation, of men who require no incentive. If the need for the greater effort and output by employees is a genuine and not a purely selfish need, it is possible to take the employees into the confidence of the management, to explain the need and invite co-operation. It seems to be a point of importance, that beyond a certain financially-satisfied level it becomes necessary to appeal to reason and loyalty, and always presumably to explain the policy and the objective to which the undertaking is working.

It is hardly necessary to mention that co-operation and collaboration represent what is essentially a voluntary contribution of effort and, whether rewarded or not, that you cannot enforce either of them, and that usually you must take the employees some way into your confidence and explain why you so appeal to them. The next point is that you cannot reasonably hope to obtain co-operation if the relations between employer and employee are bad, therefore the increasing prominence given to co-operation predicates good working relations.

Like loyalty, good working relations cannot be one-sided. The employer who complains of lack of loyalty on the part of his staff may well ask himself if he is always himself loyal to them, and in working relations mere benevolence should not be confused with real co-operation, consultation and collaboration. There must be two-way traffic in the relationship to give good conditions, and it may take some time to build such

relations where the past has contributed to an atmosphere of suspicion of motive between employee and employer. Thirdly, it is difficult to make a case for collaboration, if the cause, object or purpose of the enterprise, or of the additional spurt required, will not bear close and informed inspection. In such case, policy may have to be improved before it can be disclosed. Collaboration is beneficial in that it automatically ensures that the standard of ethics governing policies at least reaches the current level, that of the employee, or of general public opinion.

The preliminaries to obtaining complete collaboration with the staff would then appear to be :

(1) The clarification and sharing of the objective, all parties sincerely desiring the success of the enterprise.

(2) To this end, the determination of a fair and, if possible, inspiring policy.

(3) Good relations between owners, managers and managed.

(4) Flexible consultative machinery, a house magazine, public relations facilities, staff meetings, and, above all, good organisation, by means of which the staff can consult and be consulted and may realise the important share in the success of the business represented by their work.

In order to secure collaboration, directors, managers and managed must be prepared willingly to subordinate any private or class interest to the interest of the whole (nation, company, department, group).

CHAPTER III

COMMITTEES IN ORGANISATION, INTERVIEWING

Committees in Organisation.—All Committees are to be regarded as means to an end, as the machinery to attain some particular purpose, variable in use to correspond with the purposes in view.

ADMINISTRATIVE AND DIRECTIONAL POLICY COMMITTEES. CO-ORDINATING COMMITTEES

The Government of the country is headed by a Committee, the Cabinet, and a Company by a Committee, the Board of Directors. There must be a reason for this form of organisation, other than to prevent autocracy, and this reason is purely one of organisation, based upon the knowledge that the problems of any large undertaking are to-day so technical and specialised that no one man can be master of them all. In this sense the Cabinet or Board acts as a committee co-ordinating a number of technical demands, or broadening and developing technical advice.

In almost all undertakings the decision of what is to be done is conditioned by means, whether the means are financial (can we afford it?), or of some other technical consideration (can our machinery or staff perform the job?). Such considerations are numerous. In a centralised State—*e.g.*, Russia—they are apparently seven in number: technical, planning, finance, supply and sale, construction, man-power, accounting. In most manufacturing industry all these functions, under this or some other name, reappear, although they may not be separately organised. These functions need to be co-ordinated in the carrying out of any policy.

Clearly, major decisions as to policy must be taken after internal consultation with the heads of each technical function and after detailed planning of all technical work to ensure that performance will be both possible and economic. Similarly, external consultation may be the subject of committee work, where technical subjects arise and are not repre-

sented at a high enough technical level within the organisation, so that a second, outside opinion is needed.

The work of such committees is most successful when it concentrates upon integrating contradictory technical opinion, instead of employing the method of compromise, which usually means that one or both sides to the conflict have to give up some part of what is considered technically necessary. The three known ways of dealing with a conflict of technical opinion are : (i) by domination on the part of the chairman, or of an important interest ; (ii) by compromise ; and (iii) by integration. Integration, in the sense in which it is here used, means the adaptation of other circumstances of the problem, or, if necessary, of the policy itself, in order to maintain intact the requirements technically essential to the complete success of the plan. Follett says that integration involves invention, or so turning or altering the circumstances as to permit of the reconciliation of technical requirements one with the other, that the clever thing is to recognise this and not to let one's thinking stay within the boundaries of two alternatives which are mutually exclusive.

At the highest level, organisation committees are concerned with obtaining and reconciling advice on what the policy or the objectives shall be, whether such advice is immediately available within the organisation or not ; and secondly, with the co-ordination and integration of the various technical plans each designed to carry out its own technical share in the objective or policy. Two highly important rôles in such committees are played by the chairman and the secretary, the former for his administrative and scientific qualities, the latter for back-stage work and overall co-ordination and continuity. Technical members of the committee are usually there to represent their own particular function, and the additional quality demanded of them is that of seeing their own part in terms of the whole. Throughout any large organisation, there usually arise a number of organisational points where co-ordination is needed because of natural separatist tendencies or points of divergence of interest which commonly develop from the nature of the work. In large executive organisations, if it is at all possible to generalise, the tendency seems to be to ensure co-ordination by placing the control wherever possible

in the hands of one man who by his skill and tact can sense discords before they come to a head, and, so to speak, strangle them at birth. But when subjects are so diversely technical as to be beyond the scope of a single person's understanding, then, only, does a co-ordinating committee become advisable and necessary. This is a generalisation which though supportable is incapable of strict proof.

Action Committees. Committees tend to disappear from the purely executive field for certain obvious reasons, such as :

(a) That to meet an emergency a committee has to be specially called together, and its members may not always be immediately available.

(b) That a committee, not having the responsibility of executing its own decisions, may be light-hearted in exercising its authority.

(c) That a group decision may be too broad where a clear-cut individual decision is needed for executive action.

(d) That a committee can be a prodigal consumer of time.

(e) That quite good men may suffer a change of character when serving on a committee.

There are some executive jobs, however, where committees are increasingly used, such as in all matters affecting staff, interviewing for appointment, promotion, transfer or discharge—wherever, in fact, two heads are better than one, or three than two, and where, if possible, the heads possess differing experience, education, background, and so ensure that unbiased decisions are reached. It is very possible that such mixed committees—mixed as to levels of authority—may play a valuable part in restoring authority in cases where acute suspicion exists between employer and employee, but the mere creation of such committees is insufficient. They must have executive work to do, the successful performance of which may induce an understanding of class by class, function by function.

In addition to these two main purposes of co-ordination and executive work, committees are used for :

(a) *Education or Information Purposes.* In effect these are meetings, at which one man discloses policies, describes a situation, or explains some future requirement; when this

process goes into reverse, and the meeting in turn instructs the speaker, it becomes a consultative committee. Then the numbers which, with economy of time, can serve on a committee will be reduced. It is worth noting that serving on a number of committees may, by broadening knowledge of overall activities, be highly educational.

(b) *Changing Attitudes.* Apart from the ordinary or special co-ordinating committee, it may be necessary to bring two or more conflicting interests together for an unimportant stated purpose with the important yet unstated purpose of, for example, making a factory man sales-minded, by attendance at marketing meetings and the consequent absorption of new points of view.

This is really a form of education, although the committee may not take the same shape as an Education committee and may be small in its membership, yet of a high level of authority. On this question of the level of authority of a committee, it is generally found that, in the eyes of staff, a committee takes the level of its chairman.

(c) *Buffers.* In many forms of administration and management there is from time to time a need for a "higher authority", or a "big bad wolf", shall we say, or other impersonal body, to which unanswerable questions can be officially referred. There is something inflexible about a committee which relieves the individual from being lobbied. Committees are also used to reduce the shock of the flat negative; it is not so much the committee which acts as the buffer, as it is the general acceptance that a committee needs a lot of time to explore its subject, during which it frequently happens that the urgency of the demand disappears and the demand itself has been forgotten.

Essentially the committee is an example of group action requiring of its members collective thinking and reasoning instead of clever individualism. There are additional qualities required of the committee-man which Lindeman has developed, of which perhaps the most important is to come to the meeting having first thoroughly prepared the subject, and done your thinking in private instead of in public. That should obviate irrelevancy. It is, of course, essential that the objective and the terms of reference given to the committee should be clearly stated, understood and kept constantly in view. For

the rest, difficulties are mostly personal ; *e.g.*, the appointment of members not fully qualified to speak on their technical function, or who talk too much, or who use the meeting for purposes other than those of the business before the committee.

A committee is not necessarily slower than the slowest member, because a good chairman can turn a bad committee into a Greek chorus to his own thought, but it ceases then to be a committee. The important factors in committees are to lay down achievable objectives and practical terms of reference, to appoint qualified members and a chairman who is not a dictator.

INTERVIEWING

The subject of interviewing is one which, in the right hands, is rapidly becoming a valuable tool of management, particularly where the old master-and-servant relationship is giving way to consultation between managers, supervisors and employees, as a preliminary to a deliberate policy of co-operation and collaboration with the staff. Although the technique of interviewing must be based upon knowledge of behaviour, and is essentially concerned with variables, it does seem that principles are emerging which a lay student of psychology may employ to help govern his handling of interviews, provided always that he himself is possessed of the necessary preliminary interest in people. The subject of interviewing has been developing independently in a number of different applications :

- (1) The Employment Interview ;
- (2) Scientific Investigation, including Sociology ;
- (3) Salesmanship ;
- (4) Safety-valve interviewing.

(1) **The Employment Interview** usually takes the form of examination of a candidate by a committee, representative of at least two interests : staff policy for recruitment or promotion, and the technical knowledge of the qualities required for the job. Such interviews are seldom founded on terms of equality, in that the candidate is seeking the benefit of employment, and the committee is capable of bestowing it. To redress this inequality the committee should try to put the candidate at his ease, so that his answers to questions

may be natural, and not too heavily charged with salesmanship of himself. This may be the chairman's duty in the first place, but the other members of the committee, if it is to function as a group, need to participate in establishing a more balanced relationship. Any suggestion of patronage or talking down to a colleague or a potential colleague has to be studiously avoided. To set the man at his ease in these circumstances requires some previous knowledge, supplied by questionnaire or by the supervisor of the particular abilities, interests and aptitudes of the individual. The study of this information should take place before the candidate is introduced to the committee, to prevent any awkward or embarrassing silence. The committee will have absorbed its terms of reference and will know exactly for what purpose the interview is being held, and will have made a point of considering, and if possible agreeing upon, the qualities for which it is searching, before the interview starts. It will thus have been fully briefed, and will think and act as a group and not as a number of individuals. The secretarial function of briefing members, minuting meetings and introducing new subjects is most important to success. For positions that have been advertised, a preliminary interview to reject optimistic impossibles is usual, but interviews by themselves are unsatisfactory, and it must be remembered that most successful men have been rejected in their time by several interviewers because interviewing technique is often seriously at fault. It takes a brilliant interviewer to find out much from a nervous candidate in a few minutes, and any help that can be given to the interview by preparation of data is valuable.

(2) **Scientific Investigation.** The interview in this field is different from an employment interview. It is essentially impersonal, purely objective, concerned with phenomena, facts, and with opinion only as a pointer to new facts. In management investigations it will not be possible to divorce the operation from the operator completely. It may be possible, in agreement with the operator, to study the operation in great detail before listening to any opinion about the process as it appears to the person most nearly concerned. After these purely factual observations have been made, it will be time to interview the operator, to measure and to evaluate the human

factor in the work equation. The methods used in conducting such interviews may be divided under two heads—strategy and tactics.

(a) *Strategy*. As in all interviews, the subject must have been fully prepared, the general background and all relevant data contributing to its foreground, not only work facts, but also management facts. The investigator should know the names of managers, supervisors, and of the employee to whom he is talking, how the works fits into the general pattern, and also how the employee fits into the human pattern. He should, if possible, during his phase of fact observation, have determined a logical sequence of the topics he intends to touch upon and the actual questions he intends to ask. He should know what points he wants to cover during the discussion.

(b) *Tactics*. During the interview or conversation he must do his very best to discover and eliminate his own personal bias, and must refrain from guessing. He should state the purpose he has in mind and describe the method he is about to employ, using simple terms, keeping the conversation impersonal, and endeavouring to enlist the interest and co-operation of the operative in the purpose of the interview. He can be honest and frank, or he can be clever. There must be cases in which the clever approach has to be followed, but, generally, it is a poor substitute in any interview for the straightforward approach, which, above all, will avoid the use of any technicalities foreign to the other party to the discussion. It is difficult to estimate the attitude towards his work which any particular operator may have developed over a long period, but the successful investigator needs to do this if he is to speak the same language and make sure that the person he is questioning really understands the purport of what has been said. As soon as the investigator thinks that he has discovered some fact of value, and if a pause in discussion permits, he should interpret his finding and make sure that he has correctly understood what the operator was saying. He must check all deductions while he is still on the spot, and any statistics, averages or percentages. It is frequently found that an operator, however skilled, has, from the specialised nature of his work, a false idea of the average or

of the whole. In the same way, the investigator, immersed in the detail of his investigation, may temporarily accept an average without sufficient thought, or may himself make a deduction from the individual case which may be false or merely misleading. Finally, he should study and register in as impersonal a manner as possible the operator-attitude towards management, towards work procedures, and the structure of the organisation.

(3) **Inquiry into Personal Behaviour.** Even a notice of dismissal can be so delivered in an interview as to leave the impression of fair treatment. There is perhaps less logic used in thinking about matters affecting self than in matters affecting other people, but the logical approach would seem the best in the long run, and it improves upon reflection. Such interviews are increasingly the function of committees, because complete fairness demands impartiality, and an impersonal attitude is seldom attributed to the individual, however high his reputation may be. The subject of personal investigation is concerned either with sins and omissions, or, alternatively, with particularly good work, and in all such cases, except that of dismissal, much of the interview can be used to build up co-operative relationship, and even a reprimand can be made an opportunity to establish a sound basis of understanding for the future.

(4) **Salesmanship.** The business of securing an order at any interview has been very thoroughly documented. The process seems to reverse the procedure sketched for the employment interview, in that it is necessary for the candidate or salesman to arm himself with a more detailed knowledge of the subject of the interview than that possessed by the purchasing committee, or individual having the order to bestow; for the salesman to analyse in advance every quality of his product, to think out every possible objection to a deal, and to have a ready rejoinder for each. He must reckon to come to the interview more heavily armed with persuasive sales talk than the other party to the interview is defended by sales resistance; and since salesmanship is his full-time job this should not be difficult. The salesman has to be a good amateur psychologist, able to sum up his man, to play on his interest, if necessary to wear down his resistance without risking its

increase, leaving his victim still fresh and cheerful. Under such conditions with the order in his bag he earns his money.

(5) **Safety-valve Interviewing.** This title is closely associated with the process of letting off steam through a valve and so preventing the bursting of the boiler. In a human situation it means affording an opportunity for the release of pent-up irritation without causing ill feeling and a scene. It will be accepted by most who have worked in close contact with a number of people that occasions frequently arise when some quite small and possibly innocent action on the part of a manager, supervisor or fellow-employee touches off a veritable mine of grievance, real or imaginary, resulting in an explosion of temper or, worse still, a sullen cherishing of ill will. This particular type of interviewing is then a tool of what, for lack of a better name, is called "personnel management". Miss Mayo quotes a number of rules for such interviews which will be self-explanatory.

(1) The interviewer should give his full attention to the person he is interviewing and, above all, make it evident that he is doing so.

(2) He should listen patiently to what the employee has to say before making any comments himself. It may then be necessary to comment on some of the things the employee has said, but the employee should never be interrupted. Probably the quickest way to arrest adequate self-expression is to interrupt. It is, moreover, imperative to remember that the successful interviewer puts himself in the background. If an interviewer does all the talking, he can be quite sure that he is either inexperienced, or that his technique is bad.

(3) He should never argue and never give advice. This is really part of the larger question of detachment. If there is any shadow of moral admonition, the employee will not talk freely. Emotional relief is obtained by letting the employee talk freely. By so doing the locus of the complaint may not only be revealed to the interviewer, but to the speaker himself.

(4) He should listen to what the employee wants to say, appreciate what he does not want to say, and what he cannot say without help. He should realise that what the speaker

states to be the source of any given trouble may not actually be so. Many a grievance about workroom routine is really based upon a dislike for the charge-hand or foreman, or on an unhappy private situation. In all walks of life there is a tendency to rationalise sentiments. In ordinary social intercourse the participants are likely to become more interested in the proof of rationalisation than in the sentiments that are being expressed. This is a situation of which the interviewer should be aware. This also means that an employee will sometimes have subjects which he does not want to touch on. This may be due to the fact that he is not facing up to the situation, which is nevertheless upsetting him. With a little help in the form of interest on the part of the interviewer, he may be able to discuss such a hidden locus of trouble.

(5) As he listens he should plot out tentatively, and for subsequent correction, the pattern that is being set before him. To test, he should summarise what the employee has said and present his summary for comment. This should always be done with great caution. It is permissible to clarify, but not to add or twist.

These five rules will leave ample room for the expression of individuality as between interviewers. There can be very few supervisory, managing or directing positions in any undertaking, large or small, in which some interview does not occur almost daily, in some jobs almost hourly. No stereotyped rules for interviewing will suit every case, but it is possible that sufficient has been said about these five occasions for interviewing to suggest thought on a subject which must still rely on the personal equation.

PART II

THE MANAGEMENT OF WORK

CHAPTER I

THE MANAGEMENT OF WORK

General Introduction. One of the subjects we are concerned with is the determination of ways of grouping duties, functions, processes, and another is the selection of the most effort-saving and efficient manner of performing any particular series of supervisory, clerical or mechanical operations.

The work of organisation, though not new, is novel in the sense that the increasing scale of operation, the raised tempo, and the degree of mechanisation and specialisation implicit in the very large undertaking working to a given objective, call for a specialised, if not a new, treatment of old problems. We all know that armies, religious orders, States, industries have always divided their work into suitable or convenient blocks, and have done so consciously on definite principles. It is perhaps one of the penalties of progress that invention, and the technical problems which arise from invention, greatly complicate the life of the individual, and add to the difficulties of administrators, managers and supervisors. It is recognised that any activity associated with radio, aero-engineering, statistical machinery and so on has each a technical field; but it is not always appreciated that the orderly control of masses of people, and the orderly arrangement of increasing numbers of work units has developed into something approximating to a technique. Large blocks of repetitive work occasion special problems in methodical routine, requiring standard treatment, standard forms, standard practice, and the job of working out what these standards shall be demands an intimate knowledge of accounting, record-keeping and effort-saving principles, in addition to an experience of how similar work is efficiently handled elsewhere. In the case of the small independent office or other unit, standardisation may be undesirable, unnecessary or difficult. The most that can be done in such units is to work through the individual, who, by saving himself unnecessary effort, thereby slightly increases the efficiency of the unit as a whole.

Organisation is a composite subject, for, among other things, it combines two separate and distinct processes : the building up of a structure of posts, and then appointing to each post suitably qualified personnel. The work of structure-designing is not unlike that of architecture, and in some fields is developing almost upon formal principles, but the staffing of posts can never be exactly scientific, because of the variations in human aptitudes, qualifications and behaviour. Perhaps, because of this compounding of inanimate and animate, perhaps because the animate man is supremely adaptable and the inanimate is static, the subject of organisation is more of an art than a science. A good staff can, and does, make a bad organisation succeed in reaching its objective, while a poor staff fails, even with a well-designed organisational structure and first-class method. The contention could be advanced that the good staff would, as individuals, longer survive, and would succeed more speedily and with less effort, if the organisation they were operating had been better designed for the objective to which they are working. Organisation by itself does nothing ; it is the staff making up the organisation who do the work, who achieve the objective, aided or impeded by the organisation.

Organisation Structure is a pattern of inter-related posts connected by the line of delegated authority. The organisation pattern of a manufacturing industry is very much the same, whatever the product manufactured, the structure for retailing is different from manufacturing industry and the pattern of most Government Departments again differs.

Comparison of a series of organisation charts showing how other countries organise their Governments and industries will bring out the similarity of pattern or structure, revealing minor differences due to the qualities of the staff available, or the particular requirements of the community served. Similarities are to be expected if organisation is regarded as primarily the intelligent relating of posts, and therefore of the individuals who fill the posts to the end that the staff may most effectively accomplish a joint purpose. The link between the creation and the relation of the posts, and the filling of them—which is part of the work of the Personnel, or Staff branch—is the analysis or classification of the various duties in a form

that will best enable the Staff Manager to put the right man into the right job. A new subject has recently developed to cover this work ; in industry, called " Job Analysis " ; in the American Public Service, " Position Classification ". The subject can only be mentioned here, for it is worthy of a separate study.

Office Method should supply the answer to the question " how " any individual does his work. It is essentially concerned with individuals, and consequently it is continuously affected by the human factor. Because of this, it differs from a " process ". A process is more mechanical, semi-standardised and fixed until it is re-designed. Wherever there are large blocks of repetitive work, methods are of such importance that they are perforce the subject of detailed study. The ingenious designing of forms and equipment has enabled large undertakings to carry out some work processes more economically by manual than by competitive machine process. Methods work is technical and skilled. Forms design is a basic element—a key—to the improvement both of manual and mechanical methods. An examination of the forms employed affords an excellent measure of the level of office efficiency on the material side. Much pioneer work has already been accomplished in developing the layout and printing of forms, to secure the clear presentation of information. Whole clerical processes of summarisation, of rendering statements of account, of comparing and checking have been eliminated by the use of carbonised forms, packs, peg-boards and other appliances. In essence, such work has consisted in applying the principles of simplification and of effort-saving to what before this treatment were complicated systems of record-keeping.

Advice. There have been consultants, counsellors or advisors in the professions, applied science and manufacturing industry for many years : Harley Street for " another opinion ", the Inns of Court for " Counsel's opinion ", Victoria Street for the consulting engineer's opinion. The need for seeking advice, and the profession of giving it, is old ; only the field is new. In choosing a new and complicated office machine, or a new process like microphotography, the need for help is clear—either a man is an expert, or he is not. The cost of new machinery is sufficiently high to warrant authoritative endorsement that the expenditure is justified. So manufacturers got together

to pool their experiences of mechanisation, and this subsequently developed into more general exchanges on other subjects of management.

The need for advice on subjects of organisation is not yet so generally accepted. In the small or medium-sized undertaking there is little need, and often less provision, for formal organisation, due perhaps to the fact that everybody knows everybody else and that much of the work of the unit is interchangeable. The unit is small enough to permit any one man's "range of attention" covering all his work activities, and of any one's "span of control" covering also the control of the results of the activities of his staff. Under such conditions it may not seem to matter much how one organises, how the pack of cards is dealt, whether by colours, suit or card hierarchy. (It is interesting to note that experiments with adults show that practice increases the number of digits they can keep within the range of their attention, but that the improvement is attributed to better grouping and not to any improvement in fundamental ability.) "The span of control" is a "blessed" sort of phrase used to indicate in some measure the size of the executive task in terms of the interactions of any one decision upon other subjects affected thereby (see Graicunas' article referenced in the Bibliography).

When the unit is large, and exceeds the possible span of control of any one man, a different picture emerges. The executive has to delegate some of its authority, and apportion the work either functionally, or, by its technical character, or by the place where decisions are made, or the work itself is dealt with, or by the public served, or by age groups, or other classes. Again, it may appear that it does not matter how he deals his cards, but such appearances are deceptive, as has been shown in many cases where companies, or even whole trades, have had to be reorganised. Before any reorganisation is undertaken it would be helpful to study the work of the undertaking in order to discover what processes are common and could be grouped together; to what extent control should be centralised, or de-centralised; how the work can best be grouped, so that routine work processes will follow one another in due sequence, will almost "flow" as on a conveyor belt; what readjustment, including mechanisa-

tion of processes, is desirable to ease a bottleneck, and to balance the work of the sections each with each. The student or practitioner of organisation knows that such study is essential if the most suitable organisation is to be introduced.

There is almost certainly an "optimum size" for any organisational unit. It is not a fixed numerical size, but varies according to the character of the work and the administrative or management decisions that have to be taken to control the work. If a given unit falls conveniently and naturally within the optimum size, organisational problems may never occur, or at least never be diagnosed as such. When it exceeds the optimum it is necessary first to discover, and then to heed principles of organisation. Optimum size would seem to be mathematically a projection of the span of control into the field of overall numerical size. "Within the optimum" might mean within one's personal ability to control through a detailed knowledge of all the functional phases of the enterprise. Delegation inevitably leads to a gradual loss of such knowledge, yet, nevertheless, delegation of power is an essential of management when the optimum has been exceeded. Whereas no generalisation can be attempted, it has been found during the war that engineering units employing from 500 to 700 operatives tend to "manage themselves", but that larger units throw up organisational and management problems, which demand skilled administration. This subject is one that would benefit from research enquiry directed to the establishment of economic and management optimum sizes.

A principle is a useful basis in analysis. As a word it tends to be abused or misused in order to rationalise conduct. Its meaning in the organisational sense is defined by White as a hypothesis which has been or can be sufficiently proved by experiment or observation to be a safe guide for action or understanding. A hypothesis is only one possible conception among many; it is a statement or proposition which has to be proved, and which you are prepared to abandon; and a statement is the expression, in words, of a relationship, whether theoretical or factual. Organisation work needs principles to serve as guides to the allocation of duties, and it has therefore formulated principles, such as those stated and developed in subsequent pages (see p. 39 *et seq.*).

DEFINITIONS

In any systematic body of knowledge special meanings are assigned to the terms used in its exposition, in order to obtain due understanding of the subject matter. Unless the meaning of the term used is fixed and apprehended, confusion results. Until some official body concerned with Management comes into being, and formulates authoritative definitions, it may be helpful to the understanding of the text that follows to read and note the following short definitions of some terms, failure to understand which is prolific of error.

Policy expresses the broad outline of the course it is hoped to pursue which will govern the detailed actions of all who work to that policy. Policy is then government, or the governing theory, and reappears, but in a modified form, at each level of authority and for each technical function.

Objectives represent the first analyses of “how” policy is to be achieved.

Administration is primarily the process and the agency used to establish the object or purpose which an undertaking and its staff are to achieve; secondarily, Administration has to plan and to stabilise the broad lines or principles which will govern action. These broad lines are in their turn usually called policies.

Management is the process, and the agency, through which the execution of policy is planned and supervised.

Forecasting is the process of estimating or predicting future external conditions or trends based upon consideration of relevant facts or statistics. As a process it is preliminary to, and associated with, planning.

A *Plan* of operations is a detailed statement of “how” the given objective may be attained, and the process of “planning” consists of resolving or separating each problem into its elements and of their re-assembly in the form of efficient and related procedures. The *Programme* of work is the plan broken down into time units convenient to operation.

Organisation is the process of dividing work into convenient tasks or duties, of grouping such duties in the form of posts, of delegating authority to each post, and of appointing qualified staff to be responsible that the work is carried out as planned.

To *Command* is to set going, and maintain in operation, the services or other activities defined by planning and established by organisation. The process is the issue of instructions which translate broad policy or objective into detailed practice.

To *Control*, in the management sense, it is to ensure that the instructions issued, or the plan of operation, has been carried into effect. The process of control is the measurement of performance by comparison with instruction, or programme, or plan.

Co-ordination is the assembly and harmonising, with policy or objective, of work, or interests, which have been separated, or divided, in the processes of planning and organisation.

A *Function* in an organisation is any group of activities designed to carry out a major, primary or fundamental purpose of the organisation.

THE LINE OF AUTHORITY

In the general introduction, organisation structure was described as a pattern of interrelated posts connected by the line of delegated authority. The horizontal sections are sometimes connected by the line of authority ; this line is more accurately described as a channel, through which policies are transmitted downward for analysis into plans, up which plans and programmes are submitted for co-ordination in and with policy, up which suggestions may travel from staff, down which instructions return—through which, in fact, passes all the internal business of the organisation. This is clearly a complicated subject, and one the treatment of which will vary as the organisation is executive, or legislative, or judicial, in character. In the first case the line may be very long, unnecessarily so, but in legislative and judicial organisations it is usually short. The field for organisation work is largely confined to those spheres which show opportunities for savings, of whatever kind, and such savings are the most possible where the line of authority is longest and most complicated.

Executive and Operational Organisation. Certain definite organisational principles emerge in all undertakings having a service to develop, or a product to manufacture, and these principles are closely associated with Authority. The purpose

or object of the undertaking has to be clarified and stated. *WHAT* is the future business of the undertaking to be? The broad and distant object has then to be determined. Next in order of statement are the limited objectives, whose achievement, step by step, will gradually lead to the point where the distant object was first set. The broad object or purpose is, figuratively, on the horizon, and is mainly useful in setting the course on which the organisation steers. The overall policy of the undertaking directs the broad object—*WHAT* we are trying to do—and the broad object is analysed, divided or planned by limited objectives, which are then handed down the line of authority for detailed analysis and the process of work planning to determine *HOW* these objectives are to be obtained. The various detailed plans, when made, have to return up the line of authority to the level where co-ordination takes place with all other technical plans, returning amended or approved for translation at the operative level into a time programme stating *HOW, IN WHAT ORDER, by WHOM and WHERE* the work is to be undertaken. Again, the detailed plans return up the line of authority for agreement with policy, which may have changed, and for the final decision of *WHEN* work is to start. The line of authority is thus very much more than the record of how authority has been delegated and to whom; it also provides a means for consultation and advice between different levels of authority.

Underlying this executive process, and part of it, are certain phases of management. They are not clear cut, easily recognised, separate phases or processes. They overlap. They are all part of the larger whole; but they can usually be recognised, and for purposes of analysis they may perhaps be dissected to facilitate examination in the necessary detail to accept their existence and importance. Together they constitute executive management, separated they are :

- (i) *Forecasting* the conditions and forces which will influence action.
- (ii) *Planning* and programming of work in terms of the objective and the forecast.
- (iii) *Organisation*, or dividing up duties into posts and the provision of staff.

(iv) *Command* and maintenance of activity.

(v) *Co-ordination* of activities.

(vi) *Control* over achievement of the programme at the right time, in the right quantity and quality, at the agreed cost and in the right place.

These are the phases of management, mental and physical, entailed in deciding what to do, where and when to do it, who will do the separate parts of it, and in harmonising all activities in order to ensure that the work is completed to programme. In the small unit several processes may be automatically performed without noticing that each has arisen, been considered and dealt with satisfactorily. In the larger unit each phase may well have to be provided for and staffed separately.

This is the broad scope of executive or operational management, and it seems essential to any understanding of the factors which may have prevented or held up the achievement of a work programme that the executive, manager or adviser should carefully investigate and familiarise himself with the whole executive process, if he is later to decide or to give advice on how to reorganise or re-design the methods employed with the object of diminishing, if not eradicating, duplication and waste of effort, loss of money, or material, and misuse of man-power.

These executive processes do not in themselves form more than a part of the broad background of management. Their examination is of value in order to explain why certain effects follow certain causes. Perhaps the ability to employ the processes of analysis is a pre-requisite to any of this work, and for that reason its subject and that of scientific method has been suggested as a preface to the study of organisation and of management. The application of analysis to the re-organisation of existing methods will repay examination. Its processes will bear repetition in order to maintain continuity of context, although they have been described earlier on.

(1) The recognition, determination and statement of each problem in all its aspects.

(2) The collection of "things known to have occurred", or facts relevant to the particular problem.

- (3) The sorting of data into cause and symptom.
- (4) The recognition of cause.
- (5) The establishment and verification of recommendations which will remove the cause giving rise to the phenomenon or problem.

The first of these five is easier to state than to carry into effect, for the recognition of what constitutes a problem will await the association of one's terms of reference with one's experience, in order to be able to state accurately how many problems are involved, and of what each consists. The whole process of analysis may well be involved in determining what the problem is. The collection of facts will consist of various processes needed to discover the answers to the five interrogatives already associated with the processes of Executive Management—WHAT, HOW, WHO, WHERE and WHEN—together with that most aggravating and useful—WHY (do it at all). The answers to these questions are unlikely, all of them, to be correct the first time, and judgment will be needed, based upon knowledge of principles, and upon impartial experience of their application, to weigh evidence and discover the relevant facts. Each one of these analytical processes, except perhaps the second, similarly requires judgment of a high order. It is only in the physical business of the collation of replies to questions that this work comes down to a routine level, and at that level, too, it is best to use experienced and qualified staff, because of the organisational trailers which can be picked up when investigating in detail any problems of work. Observers cannot supersede the discoverer who is to introduce into the facts a new principle of order.

Ralph Barnes in his book on work methods gives an admirable list of questions.

“(1) *What* is done ? What is the purpose of the operation ?

(2) *Why* is the work done ? What would happen if it were not done ? Is every part of the job necessary ?

(3) *Who* does the work ? Who could do it better ? Can change be made to permit a person with less skill and training to do the work ?

(4) *Where* is the work done ? Could it be done somewhere else more economically ?

(5) *When* is the work done ? Would it be better to do it at some other time ?

(6) *How* is the work done ? This suggests a careful analysis and the application of the principles of motion economy."

Earlier on, under the title of Executive or Operational Phases of Management, it has proved possible to suggest a gauge for the overall measurement of the whole, or a template to ensure that no separate process has been omitted, as has often been found in fact, due to growth of an organisation and to oversight. This gauge is clearly useful in a broad way, to provide lines for further analysis of each phase in greater detail. Those who have worked and written of their work as organisation consultants, or methods engineers, have discovered in operation, or have developed, various principles. Those which have immediate application to management would appear to be :

Principles of Management

(i) To use the processes of research, or investigation, to determine the facts.

(ii) To use facts as a basis for the establishment of policy, objective, programme and procedure.

(iii) To establish and maintain controls, or standards, by which,

(iv) Performance may be compared with programme, or optimum.

(v) Having established standards, to concentrate attention on deviations from standard, or the exception, thereby limiting investigation to the essential.

(vi) To arrange the location of work points so that each physical operation is placed as near as possible to the point where the preceding operation takes place.

(vii) To simplify all work by the elimination of any superfluous operation, product, or record, and to make all remaining operations as simple, in terms of work requirement, as may be possible.

(viii) To bring to all processes of measurement or judgment a complete impartiality.

Any of these principles may be compounded one with the other to form apparently new principles. Finally, if it is truly a principle, it will almost certainly, when enunciated, be recognised as being just "common sense".

The Line of Authority has been shown to be a channel or executive life-line through which all the planning and control of work is carried in two-way traffic. That line has to be kept as short as possible, and as clear as possible, if the business is to be flexible in its administration. It must be *well defined, easy of access, speedy in operation*. It is the central core of the structure or organisation. In a large undertaking there is danger of too much reliance upon the line of authority, too much consultation with a higher authority, alternatively, too much hanging on to authority, or failure to delegate. This subject will be further considered under the heading of "Centralisation and De-centralisation", but it offers a fruitful field for investigation. When the line of authority has to be short-circuited, and a man working at a comparatively low level in one function gets directly into touch with his opposite number, thereby saving a trip up one line of authority and back down the other, it is generally agreed that authority is maintained if each level tells the level above it what has been agreed. Authority in executive management is at its most valuable when it is correctly centred where execution takes place. In many industries authority is issued as "financial limits of expenditure" up to which each level can agree without prior reference elsewhere. When such a measuring rod can be applied, its use in this way guarantees acceptance of authority, and prevents delays or lost opportunities.

The Division of Work is an important part of the methodical side of organisation work, but it is only a part of a greater whole. It is apt to obscure the more decisive, more abstract factors; the way in which authority is delegated and the degree to which it is delegated; the contribution made by the line of authority to the *flexibility* of the organisation structure and to its *cohesion*; its effectiveness as a factor in smooth government, as a means of consultation, and as a source of

judgment or decision. Neither authority, nor work division, nor command, nor co-ordination, nor control is in itself a subject; each is a part of the larger subject of organisation. A distinction must be made between the Authority of governing, which is *not* delegated, and the Authority of action, which *must* be delegated.

CHAPTER II

THE PREPARATION OF WORK

Forecasting as a process is preliminary to planning, yet may well be a continuous process during the whole execution of the plan. If planning may be likened to the brain (or a part of it), production or execution of policy to the limbs, then forecasting may be described as the eyes of the unit. Forecasting is the process of estimating or predicting the conditions or forces, financial, economic, social, which will influence the form that policy takes and will affect a given policy during the period of its being carried into effect. Internal requirements for men, money, material, will have to be planned in the shape of quantities and qualities, but it remains to forecast, or to prepare a statement and measurement of the known external factors which may influence performance of the various plans, basing the estimates upon present conditions and upon deductions made from them, and from past experience of the effects of similar conditions and forces. The objectives of forecasting are to discover constants, and to establish trends for those variables which closely affect the performance of plans, and to work out the effects of such conditions at selected points of time within the programme. Forecasting has been employed on a considerable scale in estimating weather conditions, monetary and other economic conditions, and in the marketing function of industry and commerce. It is often handled by services or agencies who employ mathematicians, economists, statisticians, who in their turn have technical knowledge, or access to technical knowledge, of the work which is being planned.

As a separate process, forecasting may tend to become theoretical. It is perhaps best kept in close association with planning, if not as part of that function, in order that consideration may be constantly given not only to the internal developments of the plan and the programme, but to external influences as well.

Operational Planning is in essence the work of making a specification in advance against which the progress of work may

be controlled. Wherever policy is sufficiently constant to permit of an objective being stated, and wherever external conditions are measurable and can be forecast, then planning is possible. Where conditions are seldom or never repeated, and no two consecutive designs for work are the same, then planning ahead may be impracticable. As a generalisation, almost all work can be planned, and the tendency with almost all forms of work lies in the direction of predetermining every step in every series of operations, and of establishing detailed procedures so that the necessary provision may be made in advance to supply all the requirements of the plan for each operation, in the right quality and quantity, and at precisely the time and place demanded by the plan. It is usually found that absence of planning leads to hesitations, to inability to control and to delays, and to all the troubles associated with a rudderless craft. The process of planning is to take the job to pieces, to examine each operation in great detail, simplifying process and method, and analysing the requirements—material in quality, quantity and time of supply, machine process and equipment required, times of operation, sequence of operations, levels of skills for the methods to be employed, and the time limits within which each task has to be completed—all this in infinite detail prior to the re-assembly of the job with a complete specification of everything needed for its performance. Very broadly, this offers a general description of the processes employed in production planning where, in order to be able to quote a competitive price and to be able to guarantee delivery on an agreed date, it is necessary to estimate, if not to know, every item of cost in average, or group, if not in detail, before it is incurred, and every quantity required. Above all things, the plan has to be flexible, so that it may readily be adjusted to meet new internal or external conditions, and to be harmonised, balanced and co-ordinated with detailed plans of the other functions, departments or subsidiaries of the major scheme. In the office, even where a number of machines may be in use, work planning may well be less complicated, because machine processes and machine output do not usually present so large a problem as they do in a factory; although the work may be less complicated, yet the underlying principles will remain the same.

How do you go about planning a job ? The same questions usually arise :

(1) What constitutes the job ?

(2) What is the purpose or objective ? When this has been clearly established, the purpose must be analysed in order to determine " how " the work is to be done.

(3) Can the work be split into portions, components, or sub-divisions, prior to analysis of each ?

(4) What are the simplest operations that will give the desired result ?

(5) Having selected the operations, a process or series is built up. In office work such a process lays down the details for recording a transaction. The process selected must itself be examined again to make sure that all possible simplifications have been included.

First, clear the objective or purpose : then subdivide it, if possible : elaborate a work process, or a clerical process, or series of processes, then study each operation, by itself and as a part of a whole, in order to cut out anything superfluous, combining operations that can be combined, simplifying each, standardising wherever possible to give interchangeability of parts and a greater manufacturing economy, finally building up a record of operations, relating each to the next, and a specification of actual requirements for staff, skills, materials, equipment, space, etc.

Production planning in workshops and factories requires a separate training combined with practical experience and demonstration, and for this it is thought that no book can serve as a substitute.

What has so far been described represents one level of planning. It is important work, and in large repetitive jobs it is essential to the prevention of bottle-necks, or surpluses due to lack of balance, and to inefficiencies arising from duplication, overlapping and lack of standards. In the very small unit the production chief may do his own forecasting and planning, which he takes in his stride as part of his responsibility for the whole function of design and manufacture, but as his enterprise grows he will have to make provision for planning by delegating in part, or in whole.

Policy Planning is the extension of the same principles to another level of Administration or Management. In most executive organisations, the planning of policy partakes so much of the very nature of the enterprise that it does not appear to have been thought necessary, or even desirable, to separate it from the other directive functions of the executive. In this sense, planning at policy level is not the work of a planning department, or of a planning staff, so much as the expression at a high level of an attitude of mind of the whole organisation towards their work, an analytical attitude which demands to know how they are to do a job, before work on it is started.

The provision of statistics, or of estimates based upon fact, is a necessary preliminary to policy planning, as it must be to all forms of planning. When policy is subject only to minor variations, and the work of the undertaking is executive, it is often possible to maintain the necessary statistical records up to date and in a convenient form. In such cases precedents, and even accepted and previously proven formulae, may be available, based upon the past experience of the undertaking, or upon external research ; and the process of planning may take the form of studying and agreeing a policy which, subject to the statistics being up to date and accurate, needs little adjustment. Where there is no precedent, and little data to guide formation of policy, it may be possible to postulate a series of alternative objectives each with a broad plan of operation. So by a process of elimination of the unsuitable it is possible to work back to the first essential step of providing not a bright idea, but a detailed plan of how the work may be done, or alternative plans, prior to deciding what the work shall be. It is the practical alternative to the making of intelligent guesses. The experience gained in the making of alternative plans is invaluable in familiarising staff in advance with the problems they will encounter in due course, but, in addition, the plans can be of great assistance in the actual process of policy formation, in selecting the useful real and discarding the useless unreal. The specification made in advance enables the executive heads to measure and weigh the potentialities of their decision in terms of the political, economic, or other factors which they know, but which cannot be known all through the organisation. The process of planning remains the same,

it employs detailed analysis and detailed knowledge of how such work has been and may be carried out. As always, it demands the combination of scientific method with technical knowledge, and their integration as a preliminary to sound judgment.

It is not difficult to see the application, use and value of the process of planning against a physical background. The movement of large numbers of persons through any narrow space, entrance or exit, or of large quantities of material through a single-purpose machine, or process, has either to be controlled, which pre-supposes planning, or there is apt to be chaos. It is not easy to visualise the introduction of planning into the mental spheres of judgment, pure administration, interpretation of the law, yet it is possible that the same principles and much of the same procedure will apply. There would seem to be abundant examples of men who, when receiving new terms of reference, think them out in advance. They may forecast the situations, or the class of situations, which their experience tells them will recur: they then analyse the factors involved, compare them with the new terms of reference: make their provisional decisions and record them mentally, or in writing. As a process this seems very similar to that of planning, although it is much less laborious. It enables the administrator to choose his place and moment for thought, instead of having to make a difficult decision in a time perhaps of stress, and when conditions are unsuitable. Planning is in such cases, if not in all cases, the mechanism of forward thinking.

Planning is largely a process of measuring situations and facts in order to determine how certain work is to be performed. Progress and improvement are evaluated by comparing what has been achieved with what was planned. The equipment of planning consists of the machinery of comparison—charts, graphs, tables and mechanical graphs, using boards, rules, slides, pegs and discs to take the place of graph paper and coloured inks. The need to equip the planning office has given rise to various systems of planning control or of production control, employing technical and complicated methods which, as already suggested, should be the subject of a separate training. Most systems employ the exception principle (num-

ber v. in the list of principles already quoted) in a visual form, an extraordinary colour exposed to view by the record of over or under production, an unusual design to catch the eye, and draw the attention to what is wrong, out of gear, or behind schedule, while leaving what is right, or has proceeded according to plan, unemphasised. It is worth while making a study of these essentially factory systems, for the suggestions they may afford for comparing any performance in any field with what was planned.

It is not often necessary or worth while measuring office output, except in a large office engaged upon repetitive work that has little to distinguish it from a factory. In most offices imponderables enter into most executive and clerical processes, whose measurement, if at all possible, would be extravagant of time. Yet this same sort of statement was made about factory work not many years ago, so it is worth while noting that standards of measurement now exist to express quantitative aspects of space, time, matter, energy, noise, motion, etc., and that such subjects as absenteeism, conveyor flow, illumination, labour-requirements, machine utilisation, material yield, productivity—to quote but a few—are now constantly kept under observation in the large production unit.

An attempt has been made, without any great success, to develop the ability to compare one's own organisation's performance with that of others working under comparable conditions by means of what are called management ratios. Such ratios have in a very few cases been built up within a particular trade or industry as proportions between the cost in money or man-hours of certain common functions, such as sales or production, or the office, and related to capital, or to turnover, in the form of a ratio. The establishment of such ratios presupposes a degree of co-operation between companies competing with one another in the same trade, which, somewhat naturally, has not yet existed except where monopolies or an unusual degree of co-operation exist. Comparisons between different industries' management ratios may be of no value. If a Trade Association should be used by its members in an executive capacity to improve overall management, it would be ideally situated to develop such management ratios within its own trade, and maintain the secrecy necessary as between

competitors. It is not at present usual for a Trade Association to touch organisation or management. Planning is not an end in itself, but it is a very useful aid to good management.

THE DIVISION OF WORK

When speaking about organisation it is necessary to think of more than a stated objective, terms of reference and a body of people ; it is essential also to visualise a designed pattern of posts, or jobs, into which the people are fitted, and further, the allocation of a set of duties which is humanly capable of being performed in the case of each post. (The adverb “humanly” is used here to warn against trying to make a post responsible for technical subjects which are seldom mastered and professed by the same man. For instance, the lawyer is seldom also an engineer ; the accountant is rarely used on development work. A post could be created which gave authority to one man for the execution of two such incompatibles, but such an arrangement would probably be bad.) When designing the structure for an existing organisation, first examine the objective, and analyse both it and the work programme into the duties—all the duties—for which the organisation will be responsible, in order that the objective and the programme may be achieved. Next, these duties should be grouped into convenient posts, according to the nature of the work to be done, not according to the abilities of staff who may be immediately available. Staff will change, but work grouping should be designed to continue, and staff should be fitted into a good structure rather than the structure bent and twisted to fit existing staff. Thirdly, sufficient authority has to be delegated to each post to enable its occupant to issue the instructions needed to get his work done, and finally, it may be temporarily useful to record in an organisation chart, or, better still, on cards, how authority and duties have been allocated.

What has been written earlier on the Line of Authority is all part and parcel of the subject of organisation structure. A disconnected structure may lead to bad organisation, although the groupings of work may have been admirably chosen.

There is a school of thought which sees in organisation an

essential machine needed to govern the execution of some policy, and as divisible therefore into : (i) making the rules, “*legislative*”, (ii) carrying out the rules, “*executive*”, and (iii) deciding upon difficult cases or the breaking of rules, “*judicial*”. In whatever way the organiser thinks, these three functions still must exist, must be provided for administratively in the Board of Directors, and executively by some delegation of authority. It could be helpful to any work of reorganisation to dissect the existing structure, and to examine what provision is at present made for dealing with these governing problems, and particularly to look for breaks in the line of authority, circuitous referring of subjects needing immediate decision, or unnecessary inflexibility.

It is not proposed to attempt to formulate any pattern for the legislative and judicial functions in organisation, because their treatment is at present essentially personal, and often confidential. It varies according to the ideas of each chief executive, and is not normally shown in any organisation chart, for it would be difficult to superimpose, and would complicate an already sufficiently complex picture. Perhaps this is the reason for organisation remaining, as a subject, on the level of an art : that the function of the government of policy implicit in any controlled organisation is omitted from the study of the means of organisation, or the application of the principles upon which work is divided (to give ease of command or control).

Organisation would then appear to divide into three separate fields :

- (1) Objectives of each undertaking, line of authority and government of the policy of the undertaking.
- (2) Structure, or division of work into groups, duties, posts ; decentralisation.
- (3) Staffing of posts.

Structure or Division of Work. This subject itself is not without complexity, partly because it has developed empirically, and has scarcely yet been studied as a subject, but mainly because, quite rightly, each division must be chosen for its convenience in terms of (a) technical nature of the work, (b) the needs of the market, and (c) last, but often first, the

personal wishes of staff. It is clear that the organisation structure is not the most important part of organisation work, that the objectives, authority and government of the undertaking are of supreme importance, and that the posting of the right man to the job is vital to success. None the less, the structure picture will bear examination, particularly because the existing literature on the subject is more concerned with theory than with how theory is to be carried into effect. This study may perhaps provide a substitute for the experience gained by working in a number of quite different organisations, in order to discover the principles upon which each has grown.

Those who claim principles for organisation are generally in agreement upon certain recognised alternative lines along which duties may be divided into convenient and manageable groups. The problem is to decide which particular means of division should be employed to suit the particular circumstances and technical requirements of the case. Such decision has in the past been associated with experience, but it is thought that there are a number of factors involved in the decision which may be analysed and studied constructively. In organisational structure work it should make no difference whether it is a new organisation to be built, or an old one to be re-designed. The processes should be the same ; if structure design precedes the staffing of posts.

How is Work Divided ? There are approximately nine recognised and differing ways in which work can be apportioned, and the most suitable, efficient or economical way or combination of ways is a matter of selection and choice. It is not scientific, in that no grouping can be proved to be perfect, because other factors tip the balance. Any apparently suitable means of division need not necessarily remain permanently suitable, for the balance between the various factors or forces governing choice may well change, after which re-organisation is needed. Organisation structure should then be regarded as a convenient mechanism of management, to be altered as soon as and whenever benefits can be seen to arise from a new grouping. The lines upon which work is divided have been established by custom, and are recognised in practice as useful guides, whether each is applied separately or in combination with others. They are found in the Services

and in industry, in this country and in others, but their list is not necessarily complete nor final. New groupings may emerge, but in the meantime the recognised organisation groupings are :

A. Of Functions. (1) *By Major Purposes, by the Objective (Unifunctional)*. Such division is valued for the clear direction it affords at the top, at the policy level, but it tends to contribute to overlapping on the fringes. It tends to exaggerate the importance of the particular purpose with which it is concerned, and thereby leads to failure to co-operate with the other "purpose" groupings of the same organisation.

(2) *By the Separate Functions of Management* (finance, production, research, etc.). Within any organisational grouping it is usual to subdivide work again by functions.

B. Of Work. (3) *By Kind of Services, by Nature of Subject, by Scientific Grouping or by Product*. This division also develops specialisation and increased skill at the expense of co-ordination. It has an obvious value in any undertaking with a number of not easily distinguished products or items of work, whose segregation by products, services, subjects, prevents confusion.

(4) *In Series of Operations, by Process or Method Employed*. In the large unit, or in any unit where the work goes through a number of processes, it may be economical to pool certain resources to facilitate supervision, to maintain or improve quantity output, and to permit the costing of work. Its disadvantages are said to be the discouragement of initiative and of individual skills.

(5) *By Quantity*. This division by volume is helpful within another organisational grouping at the level where all work consists of the same operation.

C. Of Staff. (6) *By Person*. Where the subject of work is scientific, or for other reasons may be intensely individualistic, where, in consequence, technical responsibility for work can neither be spread nor delegated, organisation by person and by individual skill is essential. It produces special problems, individual in character, of which the most obvious is of succession. In its management special qualities of leadership and co-ordination are called for instead of control.

(7) *By Rank or Authority*. Although this is not true organisation, in that no division of work need take place,

it is a label used in some organisations to separate a small self-contained unit from other units (a captain's command, a sub-manager's branch).

D. Of the Community. (8) *By Geographical Boundary.* Of particular value in the division of national or other wide interests serving the community in their homes or other fixed places, this grouping is also used to decentralise a command. It does not apply to moving populations. It has obvious disadvantages on the boundaries, where closely adjoining communities are referred to different and even distant offices. It is associated with decentralisation of authority.

(9) *By Class or Group of Community Served, by Customer, or Market.* The value of this form of organisation is primarily to the people served, in that it simplifies their dealings and concentrates all transactions in one office, where the close association with the public brings realism in dealings. Its disadvantage is the wide variety of work which may exceed the individual's range of attention.

WHAT ARE THE FACTORS GOVERNING SELECTION OF THE APPROPRIATE ORGANISATION ?

(1) There may be no choice of a grouping due either to some dominating factor, such as National Defence in time of War, or to the need to meet a particular interest, or requirement of :

- (a) The rest of the same undertaking ;
- (b) The customer ;
- (c) The undertaking itself.

(2) Alternatively, the grouping may be based upon the work it has to do.

(a) *The degree of permanence or transience.* Whenever peaks of work load are unavoidable, pools of temporary assistance are organised, or a travelling circus with its own supervision may be sent, to reduce a peak, or to eliminate arrears.

(b) *The size of the undertaking.* In the small unit organisation is often necessarily by persons, because there is not the staff available for organisation by function, a grouping which applies readily to most large undertakings.

(c) *The technical requirements of the job* may dictate the lines upon which work is most conveniently divided, by reason of its scientific nature, requiring organisation by persons, or the valuable nature of the material handled, where each operation may need to be 100% duplicated, to avoid any chance of collusion.

(d) *The need for speed of decision* tends to reduce the use of committees and to concentrate authority and action in the hands of the individual executive.

(e) *The degree to which accuracy is required* may demand specialisation.

(f) *The degree of executive control required* over work may need division by function.

(g) *Interconnection of subject.* When a decision on any one subject necessarily involves consideration of consequential effects upon other subjects, the potential span of executive control will necessarily and mathematically be reduced. One man should in these circumstances control fewer subjects than when any decision he takes is clear-cut and affects one subject only.

(h) *The variety of subject* handled may demand organisation by subject or product; to facilitate the routing of work and the expedition of business.

(3) *The Need for Simplification and Standardisation* as an overall governing factor may demand grouping by work in one form or another.

(4) *The Relative Cost of Organisation* is an important but apparently immeasurable factor. Grouping by subject or product may multiply executive staff and overhead cost. There is no true yardstick to the cost of organisation, yet financial gain has been known to follow a change from one form to another.

(5) *Qualities of Staff* available may at times provide a limiting factor which can normally be removed by selection and training.

(6) *Need for General Executive Experience and Training* may call for the use of committees to spread overall knowledge of management and administration, particularly where there is organisation by persons.

(7) *Existing accommodation* may seriously influence the grouping of work until such time as suitable premises can be made available.

This analysis can only serve to provide pointers towards particular work groupings. New and additional factors will be recognised as the subject is further studied, but sufficient have been submitted to make it clear that a major decision upon organisation should only be taken after careful investigation of the work with which the undertaking is charged and the weighing of the forces or conditions of work which affect decision. There is as yet no measure that any particular organisation grouping is the best for any specific purpose, although study will show that certain groupings have proved successful in achieving certain objectives.

Whatever the grouping of work, a good team can make even a bad organisation structure succeed, but the load upon individuals should be decreased if the division of work has been well chosen to suit their abilities and the requirements of the job.

CENTRALISATION AND DECENTRALISATION

In any large undertaking the question arises from time to time of the degree of authority which should be delegated to branch units, and in order to revise policy governing the delegation of authority, consideration has to be given to the pros and cons of centralisation or decentralisation, of power and initiative. Most large industries which have studied this subject seem to have found that the way in which they decide to treat it governs the general shape and structure of their whole organisation. Some Government Departments have adopted regionalisation, and military organisation has fathered the subject. It would seem, therefore, that all large undertakings share this problem of the degree to which authority should be delegated. As a subject it is therefore important whether an entirely satisfactory solution to the questions can be found or not.

There will be essential differences between different classes of enterprise, between those which are State-owned, where initiative is usually circumscribed by legislation or discipline, and others individually owned, where activities are not so

governed. In the former, strict conformity with precedent or with orders may be necessary; in the latter, a premium may be placed upon enterprise and initiative, independent of precedent. Such differences are not conditioned by the individuals who work within the differing undertakings, but are dictated by the nature of the work itself, and by the fact of being held answerable in terms of political controversy as opposed to the executive criteria of object achieved or profit made. Yet each class of enterprise, if its organisation be related to its objectives and procedures, may illustrate different ways of exercising authority, and may suggest ideas of practical value, each to the other.

The problem of decentralisation usually arises as a direct consequence of growth, whether of sheer size, diversity of subject, or of a simultaneous growth of size and subject. Alternatively, it may be associated with a demand for an extension of service in the provinces, or for such delegation of power and authority as may be necessary to enable a local official or manager to take a decision himself, instead of referring the matter to his headquarters. In all undertakings the demand might be represented as a need to provide a local office, showroom, or stock of merchandise, and for special prices to be obtained locally.

The point of growth beyond which delegation of authority becomes clearly necessary has been termed "optimum size", in that an organisation which does not exceed this size is "best" for the simplicity of its organisational problems. Such a level is not a constant for all undertakings, but varies according to the technical nature of the work and the complexities involved in its co-ordination and control. Failure to delegate causes delay.

The application of decentralisation to the conduct of business suggests an analysis into two main fields or divisions of activity: the Directorial and the Executive. In the former certain processes are involved in centralising the settlement of questions concerned with a number of individuals in different localities, or with work when spread over a number of geographically separated divisions.

The first of these processes is the bringing together of the various contributory factors, such as the association of local

knowledge with overall policy, in order to interpret the latter in the light of the former. When it is difficult to bring knowledge of local conditions to headquarters, it is usual to delegate authority to the district. In the past such difficulties have been based upon delays, due to a number of physical factors, such as communication and consultation. These have been largely reduced or eliminated by tele-communication.

Where communication of a complex problem remains difficult, and local knowledge is a predominant factor in taking a decision, it may become necessary to post men well versed in policy to work in a district. Their knowledge of policy would become out of date quickly if they remained at a district office, and, in effect, this arrangement means that the burden of travel is transferred from papers, in transit to and from headquarters, to those seconded members of the central management, who will need to refresh their knowledge by attending policy committees. An alternative organisation has been developed within industry under which certain directors spend alternate weeks at headquarters and the district. The close association with the community, factory, or market, and its link with the Board Room resulting therefrom, has been found helpful in ensuring a real policy, closely co-ordinated with the needs of the public, or market. From the point of view of economy in the making and keeping of records, it would appear more economical to record and transmit decisions than to document lengthy consultations and arguments leading to decisions. The saving in time of consultation and typing, where policy knowledge is available on the spot, must have an important bearing upon decentralisation.

Any decision to centralise or decentralise need not necessarily be permanent, and indeed may be deliberately framed or directed as a temporary measure to achieve a specific purpose, such as the co-ordination, or the integration into one closely-knit organisation, of a number of self-contained units, previously only loosely associated. Whereas any organisation consists of two complementary parts : (i) positions or jobs connected with one another by the line of authority ; and (ii) persons or staff, filling those positions, who are connected by working relationships, it may often be necessary to centralise activities and bring people together for a sufficient period of time to

allow a co-operative or collaborative spirit to develop among those who later are to work at a distance from one another. Such centralisation may be regarded as a phase in the development of a sound and flexible organisation.

The second process in centralising decisions is the co-ordination or harmonising of policy interpretations with similar decisions or situations arising, or which may arise, in other districts or branches.

Whereas in the small business any problem may be judged on its own merits, and a decision be taken irrespective of other conditions, in the large business, and particularly in Government, each problem has to be considered in the light of other problems and of the same problem in other districts. Clearly we have here a centralised function of management that it would be difficult to decentralise.

The general conclusion, in so far as Directorial or Policy requirements are concerned, is that the policy function is essentially a central service which cannot be delegated permanently without loss of the overall vision upon which it is based. It can be transferred to a branch office, or decentralised temporarily, or for regular short periods, alternating local service with regular periods of central administration.

The second field of activity affected by decentralisation is classed as Executive work, in that it is concerned with the execution of the policy determined by the Board. In deciding how much Executive authority should be delegated to a branch office, consideration will need to be given to a number of factors.

(1) The degree to which work must be centrally controlled :

- (a) for results in quantity, quality, time ;
- (b) for technical process ;
- (c) for overall efficiency, cost, economy.

(2) The need as between regions for the standardisation of office and factory procedures, forms of contract, accounting methods and statistical returns.

(3) The need for uniformity of conditions of employment.

(4) The requirements of the organisation for continuity and experience under which some staff may be transferable between district or branch and headquarters.

(1) (a) When work arises at a branch and is handled there under an agreed policy, the only central control needed may be statistical. Where work initiates at headquarters, but comes within an agreed and well-understood policy, any control of performance may remain with the branch; but where new work is concerned, not governed by policy or precedent, the need may arise for central progressing and for continuous central control. In any large undertaking it would seem essential that executive control of routine should be vested in the local executive, controller or manager, reserving to headquarters the launching of new work and its control only until such time as work habits or routines are formed. Where such delegation takes place, a central inspection function is usually created to ensure, whether by complete audit or by spot check, that work has been completed.

(b) Technical processes are usually standardised as between branches, and technical development becomes centralised under headquarters supervision. A branch may be encouraged to initiate development, but if standards of production are to be maintained, any modification or variation of process needs to be approved centrally and to be issued to all branches as an instruction. (A study of various cases, and contradictory practices, has been made in American industry.)

(c) Control of efficiency is either centralised in order that comparison may be made between the costs of all branches, or it is delegated by the creation of standards of performance issued to all branch managements, who themselves compare their performance with the standard laid down, and comment or report to headquarters only upon deviations from standard.

Delegation of the executive process of control would seem in large organisations to enable headquarters to concentrate upon the major function of planning future policy, and consequently on future operations.

(2) The need for standardisation between branches will depend on the degree of similarity of the work each is performing. In the interests of economy, the principles of standardisation should only be discarded when work differs essentially between each branch.

(3) The need for uniformity in conditions and terms of employment appears at present to be greater in the Services

than it is in industry, where the accent is upon opportunity and profit. In few industries, other than in retailing, is branch management so similar as it is between units of the same branch of the Services; in fact, the variations in the nature of the work between factory and factory or office and office has in the past been reflected in a diversity of wages and salaries. The need for uniformity is then closely allied to the standardisation of work, as in a Railway Company or the Post Office. In most forms of Government, the Chief Executive decentralises to autonomous self-contained units, and, generally, the first processes and functions to be centralised are—printing, personnel management, finance.

(4) In large organisation there would seem to be an increasing need for the top and lower rungs of the ladder of promotion to alternate between central and decentralised posts to promote practical knowledge of the work entailed in any policy or executive decision, so that directors may have participated as much as possible in the work they will later have to direct. Lower posts may need to be associated with local engagement in order that staff may take the greatest advantage of the economic and social conditions of the districts where they have their homes.

To sum up, organisation experience seems to suggest that matters of policy must be centralised, whether the policy is of overall direction or close technical instruction. Policy is often used in two senses: the broad outline of the course to be pursued, and the technical code governing detailed action. The technical man regards the principles governing the application of his technique as his policy, and this he acknowledges as capable of central direction. Developments in organisation seem to point towards increased dispersal of executive management under statistical control and financial inspection.

CHAPTER III

THE PROCESS OF COMMAND

LET it be assumed that the new undertaking or the existing unit is now working its way through the various Executive processes ; that it has already forecast the conditions under which it has to work ; devised a plan and a programme of what work it is to do ; and has divided up work duties into posts, and has allocated staff to fill the posts. Everything awaits the order to start. This is the first function of command. When the order has been given, the process of command remains in charge to see that action continues. The stated principle of "Unity of Command" is almost axiomatic—that on any given subject only one set of instructions may be issued to any particular group of employees. The multiplication of instructions on the same subject from different sources divides loyalty and impairs obedience. Sooner or later it leads to contradiction of instructions and to confusion. Under functional organisation a man may receive technical instructions from a number of different functional chiefs how his particular work is to be carried out, while remaining under the management of his own particular chief, who is concerned with policy and output. There need be no duplication or confusion in this. The salesman is told by the Accountant how he is to account for money he may collect or expenditure he may incur. He may also receive advice from the research staff on the line he should take in recommending a particular technical product to suit the special requirements of a particular customer. At the same time he may be in correspondence with his sales manager on the need to open more accounts, or to increase sales to his existing customers. If these various functions are well and truly co-ordinated at headquarters, there can be no contradiction of instructions, each of which is concerned with one technical function, or one separate subject only.

The machinery of command is clearly the issue of instructions, whether verbal or in writing, and the methods employed in conveying instructions will repay examination.

Clarification of subject and simplification of expression would seem to be essential to the understanding of what has to be done, and this understanding is surely a necessary preliminary to obedience, if the subject is at all complicated. The issue of an instruction demanding action on the part of staff presupposes the knowledge that the work can be done, and almost certainly how it is to be done. This suggests that any command must be issued through, or preferably by, the production chief, who has passed the plans and satisfied himself as to their practicability. Alternatively, if the work is new, explanation or training is necessary to enable staff to carry out the instruction efficiently. The first two points are, then : (i) to be satisfied that the job can be done in the way and the time laid down ; (ii) that the staff know " how " to do it. Phraseology and presentation are two fields in which simplification and clarification are often needed. Instructions should not be couched in words or phrases that are not immediately intelligible to the most humble educational level of all who receive the instruction, or the whole purpose of telling operatives what they have to do, and how they are to do it, may be completely lost, and muddled thinking will hamper operations from the start. Instructions provide a valuable opportunity to vitalise work, and to stimulate interest on the part of staff some of whom may be working in branch offices, remote from the centre of the undertaking. Such opportunities to keep vitality in the organisation should not be missed. Obviously " uplift " circulars can then be cut out.

Command travels down the line of authority, delegation of which has to be clear, recorded and recognised. If instant obedience is required of skilled staff, respect for technical accuracy is necessary. This factor is increasingly responsible for organisation by the " technical function," as work becomes more and more specialised. The measurement of knowledge and ability needed to control executive work has been attempted, and has resulted in various ratios being worked out tentatively between the requirements of administrative or managerial ability and technical knowledge for the execution of various sets of duties in an industrial organisation (see p. 62).

If, in order to issue commands effectively, it is first necessary to know what the work is and what the capabilities of one's own

	Administration, %.	Technology, %.
Managing Director . . .	90	10
General Manager . . .	75	25
Works Manager . . .	66	34
Chief Engineer . . .	40	60
Director of Research . . .	30	70
Sales Manager . . .	55	45
Personnel Manager . . .	60	40
Accountant and Treasurer . . .	45	55
Secretary . . .	55	45

(These are the ratios quoted in the Report of the Interdepartmental Committee on the Establishment of a School for Aeronautical Science.)
An earlier analysis was attempted by Henri Fayol.

Special Abilities.	State Under-taking.	Very Large Firm.	Large Firm.	Medium Firm.	Small Firm.
Administrative . . .	60	50	40	30	25
Technical . . .	8	10	15	25	30
Commercial . . .	8	10	15	15	15
Financial . . .	8	10	10	10	10
Security . . .	8	10	10	10	10
Accountancy . . .	8	10	10	10	10
	100	100	100	100	100

immediate staff may be, it can only be helpful to look at work, not merely in terms of the method that has to be employed, but also of the knowledge needed to use the selected method intelligently. Neither one of the two sets of ratios given should be regarded as more than a cockshy at the background needed, since presumably they are based upon averages of the requirements of certain particular undertakings, though each sample happens to have been formulated from experience in a different country. They are stimulating to thought in the still-uncharted field of fitting the right man into the right job.

It has been suggested in an earlier paragraph that Command has two distinct jobs to perform : the pressing of the bell which signals that work can now start on the new plan, and the continuous process of maintaining the execution of the work

upon the original plan, or some necessarily modified form of the plan. In the second, the major field of command, new circumstances and conditions may and usually do arise, which may be reported to the Head of the undertaking, who exercises the function of command, either direct from outside or through his organisation. In the latter case information is passed up the line of Authority, either of fact, describing an incident which has already taken place, or of opinion, as a warning that it may arise. In the first case—that of information coming from the outside—the procedure may well be similar to the receiving of a new objective, where the new target would be sent down the line of authority for new plans and programmes to be drafted.

In the second case, however, action has to be initiated within the undertaking, and this may well test the design of the organisation structure, which will be classed as good or bad according to the success and speed with which the undertaking is able to adapt itself to the new conditions, programme or method of work. Dealing with this situation involves imponderables of loyalty, technical knowledge, understanding of the objectives of the organisation and the general flexibility of the enterprise; and ability on the part of staff to consult those above and below them in the hierarchy. In fact it tests the overall adaptability of the whole organisation. In the first case a wooden and inflexible organisation would still suffice, in the second the live and flexible organisation has the advantage.

Henri Fayol listed eight good qualities for any man who has to command :

- (1) Have a thorough knowledge of his staff.
- (2) Eliminate the incompetent.
- (3) Have a sound knowledge of the agreements between the undertaking and its employees.
- (4) Set a good example.
- (5) Make periodical examinations of the organisation with the help of charts.
- (6) Collect the principal assistants in conferences, in which unity of management and effort can be arranged.
- (7) Not let himself be absorbed by details.
- (8) See that his staff possess energy, initiative and loyalty.

In extension of these good qualities, or behaviour, it may be added that Command should :

1. Travel along the line of authority.
2. Simplify instructions.
3. Institute training wherever the field of work is new.
4. Interpret its authority as a mutual relationship.
5. Stimulate and vitalise.
6. Maintain flexibility.

Finally it would seem worth recording that the process of command has already altered considerably from the period of the barking of orders, through the phase of secrecy, and is approaching the period where management is open, has little to conceal, is informed and highly intelligent. Command as a function must remain, although its form and exercise may alter.

THE CO-ORDINATION OF ACTIVITIES

When a car, or a watch, or any other piece of machinery, is taken to pieces, all its components have to be re-assembled, before it can be set to work again. When the work and the duties with which our undertaking is charged are divided into groups so that action may follow, it is equally essential to co-ordinate or re-assemble the parts, in this case the activities, to ensure that the job has been completed. Co-ordination as a process is then a natural requirement or consequence of the process of organisation, and is just as necessary as was the division of work itself. In the small unit each executive may have trained himself to round off each job of work semi-automatically, tying in all the loose ends which affect other sections of the same business, but in the very large unit this co-ordination is more difficult.

In manufacturing, where policy and product are reasonably constant, co-ordination is comparatively simple. In the Services it would appear to be difficult. Some companies plan and co-ordinate the activities of each function through overlapping committees. A director of the company is chairman of such a committee, while its membership embraces several grades of staff in the function whose work is under review, as well as high level representation of each other business

function, whose work or policy may be affected by any change in such policy or operation. It is claimed that where this procedure is followed true co-ordination takes place in that each function is warned in advance of any change in policy contemplated by any other function, and is given an opportunity to consider, comment upon, or vary, any suggestion which may affect their work. At the same time one of the disadvantages of the specialisation which goes with organisation by function is overcome, in that these committees bring all points of view to bear upon the future conduct of the business and avoid the narrow functional outlook. This example introduces the first principle of co-ordination, that its activities should start at the earliest possible moment, if possible at the moment of formation of policy. The longer that co-ordination is left in abeyance the wider have the activities spread and the more difficult does it become to co-ordinate conflicting plans, designs, techniques and views, which soon have a tendency to grow into fixed ideas—as to how the job is to be done.

The second principle of co-ordination is that personal discussions should take place between those chiefly concerned, in order to avoid the misunderstandings which might otherwise arise through misinterpretation of the written word.

The third is that co-ordination should be regarded and organised as a continuous process, and should not be taken as a demand or need that can be immediately satisfied and then pigeon-holed. If activities can diverge, overlap and duplicate one another, as they commonly do, one moment of co-ordination, when every loose end is tidied in, even at the policy-forming stage, gives no guarantee that untidiness will not return next day. The need for co-ordination is then always there, and its machinery must be designed to give continued service.

The fourth principle of co-ordination is that elaborated by Follett—that the purpose of co-ordination should be the integration of different and possibly conflicting interests or ideas and their combination in a purpose shared in common. This is put forward as the opposite of the policy which permits of the over-ruling by any one party of the views of others, so leaving unreleased any conflict that may have arisen

dormant and ready to reappear at the first opportunity. It is clear that a co-ordinated view of all the aspects of a subject is a new or additional view. The central management sees more of what is going on than is possible for the man who works in one specialised section of the enterprise. Five men watching a boxing match, seated at different angles of vision, may have quite different ideas of what happened during a clinch. If their views could be co-ordinated, there would be less need for a referee. The suggestion is that co-ordination of policies or plans results in an integration which is not the same as the sum of the plans, but may be greater or less mathematically in that it merges details, and develops the whole, or the combination of details, into a common policy or plan.

When there are overlappings, duplications and conflict, what can be done to secure co-ordination? *First*, do all units, branches, directorates share the same objective? Or are some pulling one way and others another? If one unit is out of step with the others, it may be possible to find a difference in purpose or of objective which has crept in by accident and can be rectified. *Secondly*, are the objectives known throughout the organisation? Sometimes divergencies appear because at the level where things have gone wrong nobody knows the underlying purpose to which they should have been working. *Thirdly*, where does the difficulty lie? Is it of work, or of the individual? If it is of work, it may be put right by clearing up the mistaken purpose, yet there is some work of such a kind that it is compounded of technical elements of two or three divisions, but is wrongly placed when managed or directed by any one of them. If the unit is too small to be autonomous—and it usually is—it may have to be regrouped with a separate unit having no close connection with any one of the four. With such a bone of contention a special co-ordinating committee may be necessary, convened under the personal direction of someone at a high level. Is the friction caused by some individual or group? Is there a grievance or an intolerance which can be brought out into the open and put right, instead of being suppressed and causing worse dislocation? Is it just accidental? May it disappear if a tactful and partial investigation is made into the cause, without pressing the investigation to a conclusion?

There is clearly no standardised solution of treatment in the case of lack of co-ordination. Each failure may be attributable to some human variable. It may sometimes be necessary to regroup duties or reorganise on the lines already suggested. It may prove helpful to run a series of large meetings or lectures at which the work of each main division is explained and related to the work of the whole : it may be necessary to publish an internal journal or house-magazine to do the same work of explaining the business of the undertaking in an interesting way, and so broadening the individual's knowledge of the whole organisation of which he is a part. Yet there will be causes that do not respond to treatment. Some work is of itself difficult to fit into any structure, and the effect of that work may induce, on the part of its practitioners, an intolerance which may have to be respected. In industry, research and production have been known to be antipathetic, the one regarding the other as ham-fisted or, conversely, as frilly-minded, so that these activities need co-ordination at Board level. In an undertaking that has a history behind it, and a reputation of which the employees are proud, co-ordination may be very much easier, because of the predominating loyalty shared by all concerned. It has been found much more difficult in new undertakings where individualism is rife, where staff has been brought together temporarily, and the members realise that there is no future for them in the undertaking.

THE CONTROL OF RESULTS

It is believed that the derivation of the word control is "contra-roll", and that originally the process was one of book-keeping and consisted in the duplication of lists of figures, or of rolls, so that each might be separately added and the totals compared, as a check on accuracy. Management controls in present-day meaning consist of a comparison between plan, specification, or estimate, with actual performance, and by inference they have come to mean also the taking of action to remedy any difference that may have emerged from the comparison. Controls are also used in multiple experiments where one experiment is kept under close observa-

tion, each of its stages being tried out on the control or observed sample the record of which forms a standard, the experiments being repeated unobserved upon the remainder. When all stages of all the experiments have been completed, comparison is made of the final results. In book-keeping to-day we also have controls. Where a number of invoices have to be posted to different accounts the grand total of such entries is listed on an adding machine, for comparison in due course with the total of actual postings made to different ledger cards by the accounting machines. There are other examples, *e.g.*, in engineering, but all seem to use the same process, of comparison to prove accuracy, or to measure shortages, or over-deliveries.

To control has been defined as the ensuring that a plan has been carried into effect, and by implication, therefore, that stated duties have been performed. In this sense, and if in the first place it proved possible to determine policy in the shape of objectives and plans, the process of control has been taken to consist first of measuring performance, then of comparing it with the plan, finally of taking such action as may be necessary to ensure success by accelerating or retarding performance either by increasing facilities or by reducing them. This seems to be somewhat stretching the original meaning of control, while keeping the essential thought. The R.A.F.'s "everything under control" appears to mean "observing progress against a plan", and is the exact opposite of "splendid improvisation".

There must be occasions with some forms of work where it has not proved practicable to make a plan in detail, where it may, however, have been possible to fix an arbitrary or agreed time limit, or programme, for each step in the job. Here, although no quantitative comparison is possible, it may still be practical and valuable to control by comparison performance against the estimate—in fact, by progressing broad divisions of work to time limits. The man in charge can then feel that he is really in charge, can know whether or not he will finish to time, and can accelerate action if he is falling behind.

The controller should not be confused with the comptroller, who draws a higher salary, and derives his title from the French "compter", to account for money.

In principle the work of controlling is most simple, and is a

natural corollary to planning, just as co-ordination is essentially a consequence of organisation. In most executive work this process of controlling has been developed to nice points of detail permitting considerable flexibility. In application such systems are complicated, technical and specialised.

Budgetary control gives an admirable example of the development of these principles to give a sensitive and flexible measure of achievement in quantity and price. It consists of separate estimates of income and expenditure analysed in weekly, or monthly, and cumulative totals. Sales estimates by lines, by groups of lines, and by total; Production estimates to satisfy the sales estimates; Cost estimates for both functions. The process of control is then to compare sales with estimate, production with estimate, profit achieved with that budgeted. Budgetary control requires detailed study if its subject is to be mastered, but its principles are perfectly clear.

Production control has developed into an equally valuable and complicated system or series of separate controls and is equally a technical subject requiring detailed study. Alford lists the following subsidiary controls :—

1. Control of activities.
2. Control of material movement.
3. Control of due dates.
4. Control of quantity and quality.
5. Control of replacements.
6. Control of labour efficiency.
7. Control of progress of orders.

“ A control system [he continues] would show at all times (1) the degree to which each unit of work has been completed; (2) the assigned loading of each machine; (3) the earliest free date for each machine; (4) the amount of orders, or quota for the period, yet unfilled.”

Despite opinions to the contrary, it is clear that to control and to manage are not the same. The control is used as a clinical thermometer to warn the trained manager that something is wrong. It does not say why it is wrong, nor what has to be done about it, but only that performance has failed to reach the level planned. It is the management which has to take action to remedy whatever has gone wrong, and not the controller.

CHAPTER IV

THE NEED FOR TRAINING

IN earlier chapters some thought has been devoted to the development of organisation by technical functions. For example, the accountant, to cite one instance, holds his technical qualification from his professional institute and takes his operational instruction, either from his chief accountant, if it is a large undertaking, or from the business management which employs him. This is accepted as a practice, if not a necessity, because company law demands that the accounts should be presented, and consequently maintained in a set and specialised form. It is thought, however, that the employment of the accountant, and the benefits which he can bring, are conditioned by statutory obligation, and that his employment might gradually cease were it not for the employers' legal obligation to maintain and submit accounts in a prescribed form—not alone for the shareholders benefit, but also for the tax collector's information.

Claims have been made, though most difficult to substantiate, that management, like accounting or engineering, is a “technical” subject, requiring apprenticeship, and qualification by sitting for an examination, and by satisfying duly appointed examiners that the would-be practitioner of management possesses a theoretical knowledge of the principles of the subject. There certainly have been cases of bad management associated with nepotism, of which the public have had experience. There was a time when it was unthinkable that anyone should manage a business who was not directly or indirectly connected with the owner. Increasingly to-day the Boards and Managements of the larger companies are staffed by men who have worked their way up, instead of being stuffed with relatives, in comparison unqualified. Most of the men who have made good have studied management, unconsciously or deliberately, with few opportunities for such study. It has been said that the effect has been good, inasmuch as it has raised the technical level of management, by the infusion of new blood, and the greater use made of practical experience.

In the past, the rate of dividend has often been regarded as a satisfactory measure of management, so long as there was anything to divide. When too much attention was devoted to the frills of management, and too little to the technical problems of product and market, then the dividends tended to disappear. These are two opposite extremes ; in between them must be a happy medium. Just as production processes have been costed and distribution expenditure estimated, it is now possible to take some measure of management efficiency by the establishment of indirect costs and various ratios, relating direct and indirect costs to turnover and capital. Such ratios in themselves offer no index of any value, when different forms of undertaking are compared, and they give but a general picture when comparisons are made within the same industry, if quality specialisation exist separately. It would not be reasonable to expect, for instance, that the ratios relating to the manufacture of a luxury article would offer any worthwhile comparison when put beside the ratios of a similar article that is mass produced, but a comparison of the ratios of two undertakings each mass producing boots, for example, might well suggest lines of thought to either or both boot manufacturers, and indicate directions within their respective managements to which attention might profitably be given. If at some future time there were to be a statutory obligation to publish such ratios, it is probable that the levels of management would almost automatically be raised, as they would not be by interference, whether of the State, or well-meaning or fee-earning advisers.

Management is clearly a subject all on its own, in that it specialises upon the treatment of human and work problems, and, further, it would appear that it is one which can be taught to men on the job, but not necessarily to university students except as post-graduates. The " practical man " is likely to take but a poor view of young men who claim to be theoretically qualified as " managers ", but lack sufficient practical experience to get their theoretical knowledge into perspective.

It would seem that a student of management should be fresh from the workshop or the office, rather than fresh from school, and that to be of real use the teaching extended to him must relate principles and theory to the experience which he has

already practically gained, and this, of course, will vary indefinitely. A new outlook on the part of those responsible for teaching is indicated. Instead of illustrating theory by practice, modern teaching demands the illumination and illustration of practice by theory. Such teaching cannot by itself create a manager, but it can help the student of management to develop his own knowledge and experience more rapidly than would be possible if the only means of learning was experience, and it should enable him to draw the maximum value from his experience by relating it to governing principles, which will thereby give him interchangeability of occupation. If the subject of management is based upon principles, its application will be universal, international and interchangeable, a function which is shared in common by all undertakings, although each will need to develop particular applications to suit each technical field or market requirement, wherever it is called upon to operate. This leaves the individual his individualism, and the interest necessary to the development of the subject, but because he is likely to be first a technician and second a manager, first a steel man, or a plastics, or a paint man, and a management man only in the subordinate rôle, he will need specialised help, whether from inside his own organisation or from outside it, on this his secondary job of management. Wherever there is specialisation there is a specialist, and for some years now "management", "organisation", "systems", "methods" have become more specialised, and the end is not yet.

MANAGEMENT INVESTIGATIONS

Who is to carry out investigations into organisation, management or methods? The management itself or an outside consultant?

If the undertaking is large enough, its own investigators may have many of the advantages claimed by the consultant and few of his disadvantages, but if the company is small it would seem that the consultant wins, on points.

What are the advantages of the independent investigator?

(1) In any investigation into organisation the subject is invariably complicated by the human element, and the regular

employee engaged upon such an investigation is in fact examining the work of his colleagues, and must endeavour to clear his mind of all existing knowledge of them as individuals and of their abilities, as known to him personally or by repute. The outside investigator is free of any such impediments to an impartial judgment.

(2) In the same way, it is highly desirable, when framing an organisation structure, to do so in terms of the work being divided, and not in terms of men available for the positions to be created. It must be difficult to do this effectively when one is familiar with existing staff and comparable positions.

(3) However impartial the investigator may wish to be, he will not find it easy to divorce himself completely from his own reputation, career, promotion when making a study of authority and how it should be delegated.

(4) The employee-investigator is unlikely to have first-hand experience of many other organisation structures, and of the different ways in which a given problem can be handled.

(5) Similarly, unless he is employed by a very large undertaking, his knowledge of methods and machines may well be limited to those already installed, and it is improbable that he will be familiar with the practices followed in competitive industry.

(6) In few forms of employment does the operator have time to stand back and study what he and the others are doing. His experience is of operation and not of investigation.

(7) By contrast the consultant often employs a team of specialists, each of whom in his own field should know more than the company employee whose work is more general.

(8) Successful investigation requires practice, in analytical methods and the objective point of view, in a number of different fields. Here again the consultant scores.

(9) A consultant may have a fund of experience to draw upon, not necessarily confined to practice in one country, and this may, in particular cases, industries or services, be invaluable.

What are his disadvantages ?

(1) The outside consultant may have an excellent knowledge of principles but insufficient technical knowledge of the

technical processes peculiar to his clients' business to enable him to give correct applications of principles, except by relying upon the knowledge of others.

(2) The actual improvements will have to be carried out by the client, and his employees, and may well be a gradual process. It may be too expensive to retain a consultant throughout the setting-up of a new organisation or a new system, and some part of the recommendations may in his absence be omitted. The resident investigator has the advantage in such a case.

(3) The high fees charged by consultants and their habit of pursuing immediate savings may in the long run be short-sighted and uneconomic.

(4) Few consultants employ a sufficiency of first-class investigators.

(5) It is profitable for the consultant to use standardised systems, limited investigations and second-class men.

(6) The consultant is essentially a visitor, and tends to think and make recommendations as a consultant, and not as an employer. This can be disastrous to labour relations.

Business consultancy is not yet a profession, in the sense that there is no control of the qualifications or methods of a consultant. Anyone can set up and claim to be qualified to advise on management matters. So long as this situation continues, the measure of consultants tends to be that of the worst of them, and the employee investigator should gradually take a more important place. If, on the other hand, the leading consultants were to get together and form a professional association, limiting membership to those who are fully qualified to advise, and advertising what they had done in this direction, it is possible that in a short space of time the outside investigator would have all the advantages in his favour. There is one final point for consideration on the subject of qualification to advise. The good employer will hesitate before he allows strangers to interrogate his staff or workpeople about their work; and if he were to choose one of his own employees to make an investigation, he would take great care to appoint a person who was most tactful and fully aware of the company's labour policy. He should take even greater care, when

selecting his consultant, to ensure that labour relations which may have taken years to build up are not unnecessarily disturbed.

SCIENCE AND MANAGEMENT

It is interesting to examine the development, in engineering and manufacturing industry, of what has been dignified by the title of the “ Scientific Management Movement ”, for the reason that it supplies a historical background to the development of some of the principles and methods applicable to all forms of work. The Management or Efficiency Engineer came into prominence towards the end of the last century, at a time when national and international commercial competition were beginning to make themselves felt in what had up to that time been a “ sellers’ market ”, and, *in excelsis*, a British sellers’ market, when demand exceeded supply and competition was comparatively feeble. Manufacturers saw the need to cut prices to maintain sales against competition, but they also saw the possibility of an increase in trade at a lower margin of profit, if prices could be satisfactorily reduced. There were two possible ways of increasing output :

- (i) By building and equipping additional premises with the most modern plant.
- (ii) By increasing output from existing premises, machinery and men.

The first of these two alternatives would have involved additional capital expenditure, and unless a disproportionate increase in output was obtainable, would result in an increase in manufacturing cost, and would be unlikely to help solve the overall problem. The second alternative proved the more attractive, for it asked for no capital expenditure, and suggested on good evidence that ample dividends were to be obtained from increasing efficiency. The general approach appears to have followed logical lines :

- (a) To improve the layout of existing premises.
- (b) To reduce the number of machine processes.
- (c) To simplify and attempt to perfect all machine processes.

- (d) To improve management, routing of work, balancing of processes.
- (e) To develop financial incentives for labour.

The Management Engineers studied each of these approaches, but not necessarily in the order just given.

(a) *Layout of Premises.* Scientific Management discovered, or uncovered, a principle—that of the sequence of operations—and endeavoured to reduce unnecessary movement of material and operatives between and during processes by first studying work processes, and then rearranging them in a consecutive pattern, by processes instead of by type of machine.

(b) and (c) *Reduction and Simplification of Processes.* The engineers developed another principle, of simplification of machine processes, combined where possible with the marrying of processes by the introduction of multi-purpose, automatic and semi-automatic machinery. In the work studies which were a necessary preliminary to such development it was not possible to isolate the machine from the operator. A machine process had at that time, and in the absence of automatic control, to be operated by a workman, whose fatigue could be reduced, and his output consequently aided, by improvement of posture, illumination and general working conditions, in an attempt to ensure that all available effort should be productive.

(d) *Improvement of Management.* The primary concern of such improvements was to perfect the routing and progress-chasing of work in process, of supplies and sub-assemblies; to analyse and plan all production processes; to relate, co-ordinate and balance process with process so as to develop an even flow of work to the assembly point along the various converging legs of production. Operations were observed, measured and standardised to facilitate the work of costing. Job analysis, or work studies, and costings were carefully undertaken and developed. Job training in new and approved methods was given in the shops.

(e) *Financial Incentives.* The measurement of work operations at once led to the discovery of discrepancies of output at different times for the same man, and at all times between man and man. Some of these differences were directly traced to variations in skill, some of which could be levelled up, and were

so levelled by job training. In another direction it was discovered that payment by time rates offered in itself little encouragement to giving greater output. A number of engineers saw the possibility of cashing in on this discovery, and elaborated various ingenious systems of payment, according to volume and quality of measured output, in successful endeavours to supply an incentive, a wage incentive, which would increase output without increasing overhead or indirect cost.

Scientific Management in its first applications represented an independent and logical, if not scientific, approach to efficiency, and it proved successful in achieving the objective which had been given to its practitioners—that of achieving increased productivity per man-hour through a complicated process of measuring, comparing, controlling the whole process of factory production, and by implication, if not deliberately, all discoverable factors affecting work, including working conditions, wages and sometimes salaries. The fact that these methods succeeded in their effort, and were of considerable economic value in enabling production to cater for demand, so advertised the subject of “efficiency”, or “scientific management”, or “Taylorism”, that its methods were studied and applied in part, or in whole, in all industrial countries.

The first books on Scientific Management concerned themselves mostly with engineering methods and wage systems. They did not place much emphasis upon the human factor other than as a controllable factor, to be controlled by the relation of output to wage and the satisfaction of a desire for a higher standard of life. Yet in actual practice, and for the good reason that it was impossible to divorce operative and operation, careful thought was given to improvements in working conditions, and considerable progress was made in this direction in those industries which accepted scientific management wholeheartedly, and did not merely instal a wage incentive system to increase profits. Under modern conditions of mass production or of quantity production, where operations are so simplified that skill diminishes almost to vanishing point and interest in work similarly becomes small, it is possible that a good management can best serve its workpeople by providing good working conditions and good wages. There appear to be

successful examples of returning to a flat wage rate, reserving the right to discharge any workman whose output, after training and refresher training, fails to reach the standard required of group working on a conveyor. In less highly mechanised production units, however, experience suggests that where all work procedures are based upon an investigation of facts, in which investigation the workpeople have to share, and where in consequence they learn to appreciate the reasoning and the conclusions reached, then both sides, manager and managed, accept the procedures as impartial and scientific. The practitioners of Scientific Management claim, therefore, that their methods, if properly carried out, lead to co-operation with employees through a joint understanding of facts and a mutual agreement as to what has to be done in terms of those facts. They also claim that their methods of basing decisions only upon ascertainable facts, of measuring and standardising work processes, enable them progressively to widen the potential span of management, and, in consequence, make it possible to extend the size to which their undertaking can grow without becoming, by very reason of its size, unwieldy, inefficient, and bound fast by rules and regulations.

This claim is clearly true in the case of those undertakings which merely add new production units to their existing production capacity, using standardised methods to make the same product in a different geographical position, town or country. Yet it would, in fact, seem in some measure to be true also of the Combine with a variety of interests and different products, which manufactures and sells a number of unrelated products whose processes of manufacture and distribution are so different that they cannot be standardised one with the other. In such a case the common shared quality due to good management is that of accuracy of control. It has been claimed that efficiency depends in large part on ability to control, and that such ability is only possible if the necessary measurements and facts are available from which correct deductions can be made. It has been further argued that if such controls are in force, and if authority is carefully delegated, an undertaking can expand its organisation and its interests almost to any size, and so embrace a wide variety of different activities.

Efficiency is of three kinds at least—efficiency of machines, management, and men. Mechanical efficiency is unfortunately bound in with the capital available to purchase, or to design, the most perfect machinery, most perfect in the sense of the nearest to 100% effective. It can be roughly measured as the amount of capital behind each man, which gives an indication of the degree of mechanisation achieved. Where whole industries have spent their past profits on dividends and have made no provision for new machinery, the overall level of efficiency must decline, whatever efforts are made to improve the other two kinds of efficiency. Apart from money, such efficiency is technical of industrial process and machine design. Management efficiency is obtainable by any company which cares to encourage its staff to study the tools and controls of management. There is a sufficient body of knowledge and literature on the subject to guarantee success. Efficiency of men involves individual ability and the encouragement of individuals to make themselves personally efficient, but even more it demands an intelligent and balanced approach to working relationships and the human factor. Clearly much can be done in this direction too.

In conclusion, it is interesting to recall one sentence from Dr. Elton Mayo's address to the 7th International Management Congress held in 1938 :

“ To scientific method we owe all that is precise, all that is necessary in human knowledge. But in the actual handling of human affairs we return to a sphere of action where science, although it is perhaps our only source of aid, cannot itself be entirely adequate. . . . ”

Again, this time from Julian Huxley's “ Uniqueness of Man ” :

“ We build laboratories to test out how we can harness and concentrate electrical and chemical and mechanical forces : but the corresponding problem of harnessing and intensifying the latent powers and activities of human nature we have scarcely even begun to envisage.”

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INDEX

- Administration, definition, 34
- Advice, 31
 - on management, 31, 72, 75
- Alford, L. P., 69
- Allocation of work, 11
- Analysis,
 - job, 31, 76
 - organisation, 37
- Association
 - Trade, 47
- Attention, range of, 32
- Authority, 55
 - level of, 40, 48
 - line of, 35, 40, 49, 61, 63
 - of a committee, 19
- Barnes, R., 38
- Behaviour codes, 7
- Budgetary control, 69
- Business advisers, 31, 72, 75
- Centralisation, 40, 54
 - as a temporary phase in organisation, 56
- Chair, group, 6
- Code of behaviour, 7
- Cohesion in organisation, 40
- Collection, of facts, 13, 38
- Command, 60
 - definition, 35
- Committees, 16, 53
- Common sense, 40
- Compromise, 17
- Conflict, 17, 66
- Consultants, 31, 72, 75
 - advantages and disadvantages of, 73
- Control, 67
 - definition, 35
- Co-operation, 7, 13
 - essential voluntary character of, 14
 - essentials to, 15
- Co-ordinating committees, 16
- Co-ordination, 35, 64
- Decentralisation, 40, 54
- Delays, 43
- Delegation of authority, 41, 54
 - of supervision, 7
- Division of Work, 48
- Efficiency, 12, 13, 58, 77, 79
 - specialists, 31, 39, 73, 75
 - three different kinds, 79
- Evaluation of management, 47, 71, 79
- Exception principle, 39, 46
- Executive Committees, 18
 - Faculty, 49
 - processes of management, 37
- Facts, 39
 - finders, 38
- Fayol, H., 62, 63
- Flexibility, 40, 43, 57, 63
- Flow of work, 39, 76
- Follett, M., 17, 65
- Forecasting, 42
 - definition, 34
- Forms design, 31
- Formulation of Policy, 34, 45
- Functions, 16
 - definition, 35
- Government of policy, 34, 49
- Graicunas, V., 32
- Group collaboration, 6
 - incentive plan, 6
 - supervision, 7
 - work, 19
- Hawthorne experiment, 7, 8
- Human factor, 3
- Huxley, J., 79
- Hypotheses, 33
- Incentives,
 - financial, 76
 - non-financial, 5, 13
- Instructions, 60
- Integration, 17, 65
- Interchangeability, 44, 72
- International Management Congress, 79

- Interviews, 12
 - employment, 20
 - personal, 23
 - rules, 25
 - safety valve, 24
 - sales, 23
 - scientific investigation, 21
- Job analysis, 31, 76
- Judicial Faculty, 49
- Judgment, 38, 46, 73
- Leadership, 11, 51
- Legislative Faculty, 49
- Lindeman, E. C., 19
- Management,
 - definition, 34
 - impartiality, 13
 - investigations, 72
 - of people, 3
 - of work, 29
 - principles of, 39
 - ratios, 47, 71
 - training, 70
- Mayo, Elton, 12, 79
- Mayo, P. E., 24
- Measurement of management, 47, 71, 79
- Mutual supervision, 6, 7
- New functions, 58
 - teaching required, 72
- Non-financial incentives, 5, 13, 14
- Objective attitude, 36, 73
 - definition, 34
- Operational planning, 42
- Organisation, 48
 - charts, 30, 48
 - cohesion, 34
 - definition, 34
 - flexibility, 40
 - optimum size, 33, 55
 - structure, 30, 48, 49
- Output, 4, 14
- Participation in management, 5, 11, 13, 59
- Paternalism, 3
- Planning, 42
 - definition, 34
 - judgments, 46
 - policy, 45
- Policy,
 - definition, 34
 - planning, 45
- Position classification, 31
- Principles, 33
 - of work management, 39
- Production control, 69
- Programme, 34
- Quality output, 4, 7
- Quantity output, 4
- Range of attention, 32, 52
- Reorganisation, 32, 50
- Reputation and company history, 67
- Research, 39
- Schloss, D. F., 6
- Scientific management, 75
- Simplification, 39, 61, 76
- Small organisation, 29
- Span of Control, 33, 53, 78
- Staff management, 3
- Standard practice, 29, 39, 44, 58
- Structure of organisation, 30
- Supervision, 8, 10
 - exclusive duties of, 12, 13
 - group, 6, 8, 11
 - management, 10
 - qualities required in, 11
 - technical, 4, 10
- Taylorism, 77
- Tradition, 67
- Training, 61
 - for management, 70
 - supervision, 11
- Unifunctional organisation, 51
- Unity of command, 60
- Western Electric Company, 7, 12
- White L., 33
- Working relationships, 6

